Gandhi Memorial College Of Education Bantalab Jammu

ECO STORIES OF
PLANTS & ANIMALS
OF
JAMMU & KASHMIR

KUSUM TREE

JASMINE FLOWERS

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Gandhi Memorial College Of Education Bantalab Jammu

Eco Stories of Plants & Animals Jammu & Kashmir

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Hon'ble Minister for Forests,
Ecology & Environment
Government of
Jammu & Kashmir

Choudhary Lal Singh

FOREWORD

Human beings are currently living in way that is completely unsustainable with the world we live on. As of now, humanity has no concrete plan for how to deal with the growing environmental issues on the planet, along with the massive resource depletion, widespread poverty and pollution. However, the United Nations is taking a lead in setting some goals to address the above issues. The world needs to be oriented in one direction to fight poverty or to help achieve sustainable development, but it is very hard in our noisy, disparate, divided, crowded, congested, distracted, and often overwhelmed world to mount a consistent effort to achieve any of our common purposes.

Adopting global goals helps individuals, organizations, and governments worldwide to agree on the direction – essentially, to focus on what really matters for our future. The Sustainable Development Goals encompass almost all the aspects of life, viz-a-via No poverty, Zero hunger, Good health and well-being, Quality education, Gender equality, Clean water and sanitation, Affordable and clean energy, Decent work and economic growth, Industry, innovation and infrastructure, Reduced inequalities, Sustainable cities and communities, Responsible consumption and production, Climate action, Life below water, Life on land, Peace, justice and strong institutions and Partnerships for the Goals.

The state of Jammu and Kashmir is committed for holistic implementation of the SDG's. Many of the goals notably; No poverty, Zero hunger, Good health and well-being can be linked to the forests for generating sustainable livelihoods based on forest products which will be instrumental in alleviation through bio-resource utilization & value addition and improving malnutrition.

Managing forests sustainably, restoring degraded lands and successfully combating desertification, reducing degraded natural habitats and ending biodiversity loss is linked to Goal No. 15 and effort needs dovetailed towards sustainable future

I complement the efforts of the department in compiling the useful information on eco-stories on neighborhood plants and animals, natural heritage interpretation, with focus on indigenous knowledge, value addition & conservation.

Choudhary Lal Singh

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Commissioner/Secretary to Govt.
Forests, Ecology & Environment
Government of
Jammu & Kashmir

Muhammad Afzal, IAS

PREFACE

India along-with other countries, is a signatory to the UN declared Sustainable Development Goals (SDGs) 2030. SDGs are comprehensive and focus on five Ps – people, planet, prosperity, peace and partnership. The role of State Governments is central to the implementation of these programmes as well as for designing convergence.

According to goals 4 and 5, the forestry sector needs to focus on the targeted environmental education for more vulnerable and deprived sections of society like women and nomadic groups for understanding the significance of natural resources and their sustainable utilization. It is believed that the actual education begins from the mother's lap, If the women folk are made aware about the environmental and ecological issues, that may lay the foundation for concepts of environmental preservation for the upcoming generation.

Climate change is the most threatening issue and an urgent action is needed not only to combat climate change and its impacts, but also to build resilience in responding to climate-related hazards and natural disasters as per Goal No. 13. All of these efforts in combination will help ensure that livelihoods are preserved for those that depend directly on forests and other ecosystems, that biodiversity will thrive, and that the benefits of these natural resources will be enjoyed for generations to come.

I congratulate the Department for putting up an effort for this compilation "Eco-stories on neighborhood plants and animals". The compilation is a welcome addition for understanding the significance of conservation and interpretation of nature for sustainable use of bio-resources, innovative value addition and promotion of healthy foods.

Muhammad Afzal, IAS

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Introduction

Tree talk launched on the eve of UN declared International Decade of Biodiversity (2011-2020) on 19th December 2010 has so far hosted 495 outdoor biodiversity familiarity sessions to popularise biodiversity study, traditional biodiversity nomenclature, latest innovations and value addition to lesser known edible cum medicinal plant resources. Exhaustive list on famillar plants discussed during 495 Tree Talk sessions in various locations of J&K are reproduced as under :

Under Forest Food cuisines, teas, soups, paranthas, pulaavs, following may be innovated at tourist and pilgrimage centres under ecotourism :

1. Koku parantha (Starwort parantha, *Stellaria media*)
2. Tarad parantha (Yam parantha, *Dioscorea belophylla*)
3. Tandalak parantha (Sorrel parantha, *Rumex dentatus*)
4. Battal Pattroda (Icevine pakauda, *Cissampelos pariera*)
5. Kulfa soup (Purslane soup, *Portulaca oleracea*)
6. Katraid soup (Bauhinia variegata soup)
7. Katraid chai (Bauhinia bark tea)
8. Khair chai (Khadira tea, *Senegalia catechu*)
9. Machran chai (Dandelion tea, *Taraxacum officinale*)
10. Seski chai (*Artemisia maritima* tea)
11. Birmi chai (Yew tea, *Taxus wallichiana*)
12. Gualmanda soup (Paklana vine soup, *Telosma cordata*)
13. Nettle soup (*Urtica dioica* soup)
14. Wopalhak parantha (Teasel parantha, *Dipsacus innermis*)
15. Garna chutni (Conkerberry leaf sauce, *Carissa opaca*)
16. Kainblu chutni (Daruharidra sauce, *Berberis lycium*)
17. Pambhal Pulav (*Rheum australis* pulav)
18. Tethven Pulav (*Artemisia absinthium* pulav)
19. Sareedi Toda (Maina Makki roti, *Zea mays*)
20. Chukladdar Saag (Knotweed veg, *Pleuropteropyrum*)
21. Drubhak Saag (*Polygonum aviculare* veg)
22. Bhatkram Saag (*Lychnis indica* veg)
23. Kayankothi saag Kakmachi shak, *Solanum nigrum*)

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24. Ittsit Pakauda (Punarnava pakauda, *Boerhaavia diffusa*)
25. Pauna saag (*Elsholtzia cristata* shak)
Digitized by Dr. Karan Singh Memorial College of Education Bantalab Jammu
26. Van gulab chai (Rose hip tea, *Rosa webbiana*)
27. Nimbu gha chai (*Cymbopogon citratus* tea)
28. Simbal Soup (*Bombax ceiba* soup)
29. Loldu Phophdu saag (*Silene conoidea* shak)
30. Shinteel pulav (Ferula mushroom pulav)
31. Chhatrhak parantha (Barmula Prantha, *Megacorpea polyandra*)
32. Kahlu soup (Fox tail lily soup, *Eremurus himailicus*)
33. Kahlu saag (Eremurus shak, *Eremurus himailicus*)
34. Prezdar parantha (Mountain candle, *Eremurus*)
35. Chaksain chutni (*Oxyria digyna* sauce)
36. Hadhdull chai (Burans tea, Cheu Chai, *Rhododendron arboreum*)
37. Jaldaru saag (*Ranunculus laetus* shak)
38. Ber parantha (Jujube Parantha, *Ziziphus jujuba*)
39. Nazposh sharbat (Sweet basil drink, *Ocimum basilicum*)
40. Bel sharbat (Sweet basil drink, *Aegle marmelos*)
41. Ringa sharbat (Thorn Apple drink, *Craetegus songarica*)
42. Akhara sharbat (Rubus drink, *Rubus niveus*)
43. Khuskhus sharbat (Vetiveria drink, *V. zizanioides*)
44. Phalsa sharbat (*Grewia asiatica* drink)
45. Nahbra sharbat (Wild grape drink, *Vitis repanda*)
46. Ubaj Pulav (Sorrel rice, *Rumex nepalensis*)
47. Kareer laddu (Musk rose modak, *Rosa brunonii*)
48. Saadu curry (Dioscorea curry, *Dioscorea melanophyma*)
49. Bidd curry (Vidari curry, Pueraria curry, *Pueraria tuberosa*)
50. Amla Chutney (Gooseberry sauce, *Phyllanthus emblica*)
51. Sohanjana pull raita (Moringa curd, *Moringa oleifera*)
52. Daraunkal curry (Murraya curry, *Murraya koenigii*)
53. Kaned chutni (Dillenia chutney, *Dillenia indica*)
54. Ghrit kunwa sharbat (Aloe juice, *Alpe vera*)
55. Mawal biscuit (Celosia cookies, *Celosia cristata*)

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56. Thangi biscuit (Hazelnut cookies, *Corylus jacquemontii*)
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57. Kanchra saag (Commelina shaak, *Commelina benghalensis*)
58. Indu sag parantha (Scandix parantha, *S. pecten veneris*)
59. Drubhak pulav (Polygonum pulav, *P. aviculare*)
60. Tarohad chai (Potentilla tea, *Potentilla nepalensis*)
61. Ratanjot biscuit (Arnebia biscuit, *A. benthamii*)
62. Ratanjot chai (Geranium tea, *Geranium wallichianum*)
63. Bibdi saag (Milkwort, Saradanda Shak, *Codonopsis rotundifolia*)
64. Koondi pulav (Geopora pulav, *Geopora arenicola*)
65. Lehberry tea (Hippophae tea, *Hippophae rhamnoides*)
66. Van kanak chutni (Oleaster sauce, *Elaegnus parvifolia*)
67. Cheu halwa (Burans halwa, *Rhododendron arboreum*)
68. Jungle Haliyan Parantha (*Coronopus didymus*)
69. Hedma achaar (Senna pickle, *Senna tora*)
70. Phander parantha (Pilea parantha, *Pilea umbrosa*)
71. Katkotar Pakauda (Bergenia pakauda, *Bergenia ciliata*)
72. Titri curry (Rhus curry, *Rhus chinensis*)
73. Guchh sherbat (Vibumum drink, *Viburnum grandiflorum*)
74. Kainth chutney (Wild pear sauce, *Pyrus pashia*)
75. Kaiphal sherbat (Bayberry drink, *Myrica esculenta*)
76. Karaal Saag (Red Bauhinia shak, *Bauhinia purpurea*)
77. Bariyaan chai (Acorus tea, *Acorus calamns*)
78. Phagwara biscuit (Fig cookies, *Ficus palmata*)
79. Trimbal sharbat (Fig drink, *Ficus auriculata*)
80. Raara biscuit (Randia cookies, *Catunaregum spinosa*)
81. Kiyar pulav (Wild onion rice, *Allium stracheyii*)
82. Choru daal (Angelica pulse cuisine, *Anglica glauca*)
83. Kala zeera Khameera (Bunium roti, *Bunium persicum*)
84. Soi chai, Saddar Chaa (Nettle tea, *Urtica dioica*)
85. Tinbru khameera (Timar roti, *Zanthoxylum armatum*)
86. Paunthe di daal (Rhynchosia pulse, *Rhyochosia minima*)
87. Tarad achaar (Dioscorea pickle, *Dioscorea belophylla*)

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88. Sohanjana curry (Drum stick curry, *Moringa aleifera*)
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89. Dheu chaar (Monkey jack pickle, *Astocarpus lakoocha*)
90. Keora chaar (Agave pickle, *Agave americana*)
91. Kakoha sherbat (Flacourtia drink, *Flacourtia indica*)
92. Gudhai chai (Hibiscus tea, *Hibiscus sinensis*)
93. Dadunj chai (Syrian rose tea, *Hibiscus syriacus*)
94. Kahu parantha (Wild olive tea, *Olea ferruginea*)
95. Eeeru chai (Holly oak bark tea, *Quercus baloot*)
96. Kaodachh sherbat (Berberis drink, *Berberis lycium*)
97. Barhainkad chaa (Adusa tea, *Justicia adhatoda*)
98. Parijat phool chai (Nyctanthes tea, *Nyctanthes arbor tristis*)
99. Shyonaka prantha (Oroxylum prantha, *Oroxylum indicum*)
100. Shingola chaar (Arisaema pickle)
101. Kafal juice (*Myrica esculenta*)

Many of these cuisines were innovated during first ever forest food festival held at IHM Rajbagh Srinagar Kashmir on 4th October 2015 and during subsequent forest food tree talks held at various locations thereafter. Let us add seasonal forest foods to our menu and persuade hotliers, dhaba walas, restaurants to give a try to lesser known soups, teas, biscuits, pulavs, rotis, shaks, snacks, sherbats to get health benefits and generate II livehoods for deprived communities and nomadic ethnic groups who are already using wild herbs, roots, leaves, flowers, tubers, barks, fruits as food. Boosting nutrition through lesser known traditional foods in the background of climate change and erratic weather patterns and as per vision of UN declared sustainable development goals (SDG-2030) becomes relevant under sustainable biodiversity utilization and ecotourism initiatives being launched in J&K.

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Maple leaved Bayur Tree *Pterospermum acerifolium*

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Flowers of Pterospermum acerifolium

Maple leaved Bayur tree is not Maple, it is Pterospermum acerifolium characterised by winged seeds contained in the furfuraceous woody capsules (Samara fruits are in Maple) developed from white fragrant nocturnal flowers pollinated by moths. As leaf is very large and elephant ear like it is called कर्णिकारा, young twigs and buds golden brown, flower ragrance Magnolia चंपा like, it is named as कनक चंपा, मुचकुंद in Hindi and ललार चंपा in Dogri. Previously included in Sterculiaceae, now Taxonomists put it in extended family Malvaceae. As large leaves are peltate stalked and arranged in spiral fashion, it is distinct & unrelated to Maples. Leaves are used as dining plates so ornamental tree is also named as Dinner plate tree. Flowers have fleshy sepals and used in wound healing. Bark is medicinal used by folk healers in skin care. Its wood is soft but flexible. It is planted in parks and gardens for evergreen dense foliage, fragrant white flowers and as religious tree useful in many religious rituals.

Laghu Dashmool Shalparni *Desmodium gangeticum*

Desmodium gangeticum

Among Dashmool plants, Desmodium gangeticum from the family is most important medicinal perennial called Shalparni, Sarivan, Prashniparni .Its roots, leaves, whole plant used in drug formulation as it is anti-inflammatory ,antheminthic and administered as kawath, kahda for several health benifits. Shrubby perennial with large ovate leaves, flowers pink purple borne in racemes. Pods are partitioned into one seeded compartments.It is nitrogen fixing perennial and enriches soil fertility. It is recommended to be planted in all herbal gardens & Botanical gardens as important Dashmoola plants known variously as शालपर्णी, दीर्घमूला, सरीवन ।

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Shrubby Thorny Ornamental *Mimosa rubicaulis*

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Flowers of Mimosa rubicaulis

Nagrota Nandni hillside slopes near Jammu get decorated with Mimosa flower balls during monsoon rains, shrub is close relative of Lajwanti or Sensitive plant Mimosa pudica which we find in parks & gardens. Two metre tall, brownish red stem studded with prickles bears red cymose heads which fade to white and thus each shrub has a mix of red, pink & white blooms quite decorative for any garden. Wood is rich in tannins so does not rot, it is used in making pegs for outdoor tents. Previously known as Mimosa himalyana, it is called Shiakanta in Bengali, Ralarlu in Sanskrit and Raal in Dogri. There is need to popularise native wild ornamental flowers like Mimosa rubicaulis in place of expensive exotics like Crotons, Parkinsonia, Cactii.

Beautiful Garlic smelling Garlic vine *Mansoa alliacea*

Flowering Garlic Vine, Mansoa

One of the most fascinating South American Climber from the family Bignoniaceae & decorating our parks, gardens, homes, houses is Mansoa alliacea previously known as Pseudocalymma alliaceum. Commonly called Garlic vine due to garlic like aroma in its foliage ,it is called लहसुन लता in Hindi, थोमी बेल in Dogri. Stem is woody, well branched with oppositely arranged pinnate leaves, leaflets glossy green. Flowers are trumpet like purplish mauve fading to white on maturity. Leaves are used to flavour cuisines and flowers can be brewed into herbal tea. Medicinal decorative climber is useful against cold, cough, arthritis and several other ailments. City of temples is quite colourful due to its abundant flowering all around. What a vine, medicinal as well as ornamental !

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Anti-malnutrition Drum stick tree *Moringa oleifera*

Moringa Leaves

I saw Moringa oleifera tree later but tasted Dosa sambar earlier, sambar with Moringa pods is more nutritious and South Indians always add Moringa to sambar. I noticed Moringa at Basohli where it is named Sundhna .In & around Jammu, it is familiar by the Dogri name Sohanjana .In fact a village across river Tawi is named after this tree as Sohanjana.In Sanskrit literature; it is named Shigru, in Hindi as सहिजन, in Tamil as Murungai. Moringa oleifera is also named as Drum stick tree due to the fact that triangular longer pods look like drum sticks .Another name Horse Radish tree is due to its white root resemblance to crucifer of same name Horse radish. Moringa oleifera is a tropical tree and flowering takes place throughout the year however in cooler areas it takes place during March april. Leaves are typically tripinnate and leaflets orbicular, flowers are pinkish yellow fading to white. It is known as Miracle tree due to richness of neutraceuticals in its phytochemical treasure. All parts from flower, fruit, leaves, seeds, and roots are used for nutritional benefits.Seed oil called Ben oil is traded in the market.Young leaves & pods are commonly sold in India, Thailand, Sri Lanka and many African countries. In African countries, Drumstick tree planting is recommended under anti-poverty & anti-malnutrition programmes. Moring leaf powder is nutritional supplement, store house of vitamins, minerals, antioxidants. It is richer source of Vitamin A,B,C, potassium, calcium, iron. Moringa flowers can be made into raiata, seed powder useful in purification of drinking water. Roots are available in vegetable markets & can be pickled. Moringa oleifera need to be included in afforesstation, reforestation activities, it is easily raised by seeds or cuttings and nursery formation is not a big deal. It can fight malnutrition & poverty so need to be focused under UN declared Sustainable Development Goals 2030 as fighting hunger, malnutrition, poverty is included in its agenda. Moringa oleifera should be included in upcoming college herbal gardens in the subtropical belt of Jammu.

Moringa Tea

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Anticancerous Dashmoola Tree, *Oroxylum indicum*

Oroxylum indicum tree with pods

Familiar forest tree known by dozen vernaculars like भूत वृक्ष, श्योनाका, अरलू, टेंटु, टुन्टुका, & English names like Indian Trumpet tree, Broken bones tree, Midnight Horror tree, Buffalo horn tree. Our forefathers included it in their foods, medicines and it was added to Dashmoola, Chyawanprash well known health tonic. Tree grows wild in Shiwaliks, it has soft wood, one metre long tripinnate leaves arranged in opposite decussate manner ,flowers are trumpet like pale purplish ,Fruits flattened with winged seeds. Tender shoots are eaten in North east, roots are used in chyawanprash under sanskrit identity श्योनाका। Its extract is recommended to cancer patients by folk herbalists ,it is rich in calcium and useful for bones. It is useful in gynecological disorders, arthritis, blood purification and liver ailments. As per doctrine of signatures, its leaf stalks when fall down look like heap of bones with flattened bone heads so aptly named as Broken bones tree .Long sword like pods are too large to create fear psychosis during night to get it another name Mid night horrors tree . It is night bloomer and is pollinated by bats. Need to be introduced in herbal gardens and ecotourism parks. Obligate association of an acomycete fungus P oroxylii need to be included in the soil for its successful survival.

Aromatic Zufa, *Hyssopus officinalis*

Zufa, Hyssopus officinalis

I had seen aromatic Hysopus officinalis called Hysopus in English & Zufa in Urdu only under cultivation in IIIM Sanat Nagar Srinagar till I happen to visit Machail in Paddar Kishtwar in 2010. During visit to Machail, I walked further towards Sumcham and on the way got blessed by luxuriant growth of Hyssop in wild .Perennial herb with multiple ascending stems clothed with opposite linear leaves and deep blue flowers borne in axils.I plucked leaves to have pleasing aroma and took its first shot in the natural habitat at Machail Sumcham .Herb is used to flavour cuisines and brewed to have herbal tea with immense benfits against cough, cold. Hysopus officinalis called Tengu in Pahadi & Zufa in Hindi is a plant of mint family Lamiaceae, it need to be included in herbal gardens for beauty and medicine and to boost its conservation outside its natural zone of occurrence.

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Silk Tree, Sirisha, *Albizia lebbeck*

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Siris tree with pods

Then in the family Mimosaceae ,now in Fabaceae under subfamily Mimosoidae ,Sirisha tree with bipinnate leaves ,no arms ,stamens more than 10, jointed at base ,longer than petals ,highly fragrant is also known as Frywood tree due to dark black bark. Tree locally called Sareen & quite common in shiwaliks is used for fodder, timber, fuel wood in villages.Fragrant flowers are borne in panicles .In Tamilnadu, its floral crowns were used to welcome guests.Pods with 10 to 15 seeds remain hanging on its branches during winter when trees are leafless .As pods rattle in the stormy wind and cause chattering sound of seeds, tree has also got another witty name as Woman's tounge tree. Genus Albizia named after Italian Albizzi who introduced Persian Silk Albizia julibrissin tree in Europe.Pink sirisha stands planted for in the parks & gardens of Kashmir for its elegance & decoration. Deciduous nitrogen fixing tree Albizia lebbeck once included under Mimosa by Carl Linnaeus but segregated into separate Genus Albizia by George Bentham as its stamens are united at base to distinguish it from Mimosa to which we are familiar as Lajwanti .It is also known as Rattle pod tree and is recommended for planting under soil & water conservation schemes.

Punjab Sumac *Rhus punjabensis*

Rhus Punjabensis

Rhus foliage fascinated me during autumn, pink red fall foliage & ripened drupes coloured my emotions .I tasted its sour fruits called Titri in my village Raang Balaand below Chauntra mata .Rhus chinensis with pinnate leaves and winged rachis still vivid in my thoughts. I was told at my Granny's house about toxic Varnish tree Rhus succedanea now named Toxicodendron succedanea as dreadful tree with ability to cause blisters on human skin as it contained toxic urushiol .In Dogri that tree is named as Arkhal or Arkhoi. Rhus punjabensis like R chinensis an edible sumac tree was seen by me at Tangdhar Karnah .Leaves pinnate but rachis not winged. Purplish flowering fruiting looked elegant, I recalled my childhood association with autumnal fall foliage .What an autumnal pink red glory on fall foliage! It can be confused with Tree of Heaven Ailanthus altissima but fruits in Ailanthus are winged samaras and autumnal foliage turns yellow instead of pink red. It is recommended to be included in hill parks & gardens at ecotourism destinations like Patnitop, Pahalgam to add charm & glory of its colourful foliage beside a fabulous fruit feast for hill birds. Sumac fruits dried & powdered can be used as spice in the preparation of various cuisines.

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Mountain Crucifer *Megacarpaea polyandra* first relished at Dawar, Gurez

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Dried leaves of Megacarpaea

I relished Sarso ka saag with makki da tohda at my Granny's house during winter in my childhood. Taste of mountain mustard shoots and mountain maize flour with sweet pure butter used to be my favourite meal at Granny's house amid oak Rhodo forest. On visit to Gurez in 2007 while surveying edible medicinal herbs ,I got to know of a tall mountain crucifer locally called Chhachh in Shina ,Chhatrhak in Kashmiri ,its leaves are dried and stored for winter use when no leaf us available anywhere. Dr A R Naqshi helped me in its exact identification as Megacarpaea polyandra called Barmoola बरमूला in Hindi .It grows at alpine locations above 12000 ft elevation and its seed take years to grow as 2 metre tall crucifer which Duthie called as Tree crucifer. To be exact, it was at Chorvan adjoining Habba Khatoon Mountain that I got its collection from villagers and was lucky to taste it for the first time in life. I tried to collect the perennial myself, started tough steep climb near Tulel but after climbing 6 hours got tired and sent Dard boy to fetch the plant from mountain top, he scaled height and returned with fresh collection of curious edible crucifer Megacarpaea polyandra. Alas! I failed to collect it myself, I developed fatigue in that alpine climb but now I will never get that opportunity to go back to its alpine habitat located at Line of control.

Yellow Whorlflower *Morina coulteriana*

Flowers of yellow whorlflower

Few fascinating flowers have got vanished from the locations where they used to grow earlier. One such rare flower is Yellow Whorlflower Morina coulteriana from the Honeysuckle family Caprifoliaceae under order Dipsacales to which Wopulhak Dipsacus belongs. I had seen it growing on Trikuta hills below Adh kunwari along Pony track, over the years lot of habitat modification led to its displacement .I could not see it growing at that location in my subsequent visits to holy shrine. I had 2nd encounter with this mountain perennial in July 2010 while I was on a pilgrimage visit to Machail temple in Paddar.Near Machail village ,it grew in abundance alongwith Onosma hispidum ,Ferula jaeshkeana,Rheum emodi & Origanum vulgare.Purplish stems upto 60 cm high supported whorls of yellow flowers ,hence named Yellow Whorl flower to distinguish it from another pink flowering Whorlflower Morina longifolia .Roots are aromatic and are used in incense making.Basal leaves upto 30 cm long ,upper smaller and with thistle like spiny margins so called Peela Bagool or Vishkandaira in Dogri . Need to plant it in herbal gardens to boost its declining population in the wilderness.

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Wild Date Palm, *Phoenix sylvestris* from my village

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Wild Date Palm with Fruits

Dates are edible dry fruits ,under cultivation around Mesopotamia, Saudi Arabia ,Egypt since Neolithic age ,still a cultural symbol ,used during Ramadan to break fasting and to celebrate Palm sunday in the churches.Wild date palm Phoenix sylvestris growing in Jammu shiwaliks is unofficial tree of Baluchistan province.During childhood days, village lads used to take me along and felled Palm tree pith used to be relished as a fun feast .Rural artisans used to sell palm leaf handfans ,small baskets,palm mats ,I still have old glimpses to peep in the memory lane. During Lohdi festival ,I used to wear garland made of date fruits called Shuhare and coconut copra alongwith groundnuts ,almonds & walnuts.Khajoor of my village used to be cited as a tree with fruits borne far away at top and no shade to the travellers ,famous proverb - आसमान से गिरा, खजूर में अटका, बड़ा हुआ तो क्या हुआ जैसे पेड़ खजूर, पंथी को छाया न मिले, फल लागे अति दूर। Traded Date Palm is Phoenix dactylifera cultivated in Iran, Pakistan, Saudi Arabia, UAE, Oman, Morocco and yields khajoor shuhara of commerce .Wild Date Palm growing in Shiwaliks is Phoenix sylvestris ,one seeded fruits turn red purple on maturity and are eaten for its nutritive value .Young leaves are woven into mats,baskets ,twigs are made into toothbrushes .Male & female trees are separate ,inflorescence can be tapped for Date juice for making date syrup rich in carbohydrates ,fruits valued for richness of calcium,potassium,minerals & vitamins. On visit to Ramnagar, I happen to come across female wild date palm laden with ripe fruits ,I felt nostalgic and shot its photo for the joy of naturalists and Tree Talk enthusiasts.

Evergreen aromatic *Duthei's Bay Tree, Persea dutheii*

Leaves of Persea dutheii

I recall my wanderings in Basohli Bani hills during early forest service days when I encountered evergreen Persea along Bhoond Bani road.Later; I had another encounter with aromatic laurel like tree on Trikuta hills. On visit to Bufliaz Surankot, lush green forest was seen dominated by Persea duthei trees. Medium sized tree with leathery oblong lanceolate leaves, emit sweet smell if crushed, width of leaves not more than 4 cm in comparison to another Fragrant Bay Tree Persea odoratissima where leaves are upto 7 am broad .Flowers greenish yellow borne in dense panicles. Belonging to Laurel family Lauraceae ,Persea duthei is locally known as Chaandra whereas Persea odoratissima is called Badda chandra .Litsea umbrosa or Neolitsea pallens is its close more common wild relative locally called Sangla or Chindu whose leaves are less greener and shorter too .Not to be confused with Tejpatta Cinnamomum tamala where leaves are distinctly 3-nerved.

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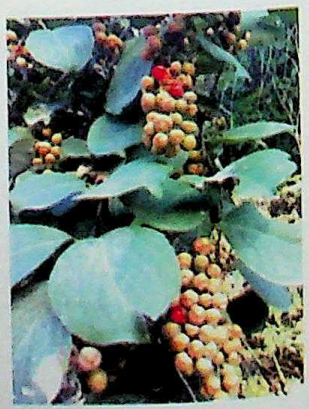
Fibre yielding Giant Himalyan Nettle, *Girardinia diversifolia*

Giant Himalayan Nettle, Girardinia

My Granny's house was surrounded by both stinging nettles, Urtica as well as Girardinia. Giant size of Girardinia diversifolia syn G heterophylla with larger palmately lobed leaves arranged alternately distinguished it from smaller Urtica having opposite leaves. Intense irritation it caused to me at Granny's house is unforgettable experience of childhood wanderings. Girardinia is useful fibre yielding nettle plant growing upto 7000 ft elevation in temperate areas ,root & leaf extract can be taken for associated nutritional benifits .Commonly called Baddi Saddar in Dogri ,it is called as Bichhoo in Hindi & Sishond in Kumaoni .Indian Himalyana Nettle or Nilghiri Nettle as it is called in English plant is sturdy with height going upto 7 ft and gives powerful scorpion like sting causing blisters on the human skin ,effect neutralized by rubbing acidic leaves of Nepal Dock Rumex nepalensis which grows in its vicinity. Bast fibres obtained from Girardinia are made into strong ropes, mats, rugs and jackets which are quite ecofriendly and need to be tried by Textile manufacturers. In Jammu region, it can be seen at Dudu, Sudh mahadev, Patnitop, Kaittha, Keya and Bhaderwah.

Intellect Vine, *Celastrus paniculata*



Intellect Vine with fruits, Celastrus

Unarmed large woody climber with lenticellate branches, alternate obovate ovate leaves, flowers borne in panicles; fruit capsules orange yellow is familiar to villagers as Malkangani or Sankheere di bel. Reputed medicinal liana used in Ayurveda & Unani for its appetizer, laxative, emetic, aphrodisiac, anti-paralytic, hepatoprotective properties.Known as Jyotishmati in Sanskrit, its seed oil is brain tonic, good for cough & asthma. Named as Black oil, Staff plant, Intellect vine, it grows in hills upto 4000 ft elevation .Over the years, its population has declined in the shiwaliks. It need to be cultivated in college, university herbal ,Botanical gardens for effecting exsitu conservation of this threatened plant which has immense health benifits.

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White Butterfly bush, *Buddleja asiatica*

Buddleja asiatica in flowers

Butterflies love blooms so do I, whenever I come across flowers, feel enchanted & thrilled to share my bloom bliss with nature lovers. During early childhood visits to Granny's house at mountain village, I loved fragrant flowers of Buddleja crispa called sadharan in Dogri. Today while crossing through Panjteerthi Peerkho road, I came across White Butterfly Bush Buddleja asiatica locally called Dhood Banaah in Dogri. In Hindi it is called Neemda ,its stems are white greyish ,leaves lanceolate borne in pairs ,upper surface green lower whitish ,flowers bell shaped borne in arching drooping dense spikes. Many kinds of butterflies get attracted to fragrant flowers for sipping nectar so it is called Butterfly bush.Due to presence of saponins, it is considered as poisonous shrub but flowers can be boiled to get yellow dye for colouring sweet rice or Khichdi. Floral tea can be taken with no harmful effects. Buddleja asiatica, Asian Butterfly Bush can be grown as decorative ornamental shrub or as butterfly loving plant in the Butterfly garden.

Orange banded Blister *Beetle Mylabris pustlata* from the family Meloidae

Blister beetle, Mylabris

Earliest beetle I got familiar with in childhood was perhaps Dung beetle, later I got fascinated by glow worms with luminescence during monsoon nights.Flour beetle Tribolium castaneum, rice beetle Sitophilus oryzae, Rhizopertha Dominica to got added my thoughts & emotions in due course of time. One beetle, I frequently noticed on Cucurbit flowers was orange banded Blister beetle locally called Phull ghodi, black body with orange bands enjoying feast of flowers during wet monsoon months. Known to secrete defensive secretion canthiridin, it causes blisters on the human skin and therefore fondly named as Blister beetle in the family Meloidae.Genus Mylabris is endemic to Palearctic ecozone. Blister beetle undergoes many larval stages, juveniles prey upon soft bodied insects like aphids but adult chew variety of angiosperm flowers belonging to families like Cucurbitaceae, Amaranthaceae, Asteraceae etc.

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Jacquemont's Hazelnut, *Corylus jacquemontii*

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Jacquemont's Hazelnut, Corylus jacquemontil

I had tasted Hazelnuts, seen Hazelnut trees at Aru Pahalgam before I could notice actual hazelnuts borne inside involucral envelopes on the tree at Kanzalvan area in Gurez in Bandipore district of Kashmir. Belonging to Birch family Betulaceae, Hazelnut bears flowers in separate male & female catkins, leaves are broad ovate, margin doubly serrated .Flowering catkins are borne before leaves but fruit nuts mature in early autumn. On visit to Doda ,I got its local name as Thangi ,when I reached Ukhral in Pogal ,its vernacular changed to Urmuni .In Kashmiri language Hazelnut is known by the name Virin whereas it is called Shahthor in Shina dialect spoken by Dards.In Hindi its name is Bhotiya badam.More than 18 species are recorded world over. During first ever Forest Food Festival held at Institute of Hotel Management Rajbagh Srinagar Kashmir, Hazelnut cookies were innovated .Many trees are under cultivation & multiplication at Central Institute of Temperate Horticulture Rangret Budgam in Kashmir.

Crabs claw, *Pistacia integerrima* from Cashew family

Pistacia integerrima with flowers

Pistacia integerrima popularly known to Vaidyas, Haqeems & folk herbalists by the name Kakkarsinghi in Dogri is a species related to Pista of commerce .In fact it is used as Stock for grafting Pistacia vera which is native to Iran. During spring new pink red foliage makes this medicinal tree more conspicuous in the forest.Leaves are pinnate with 7-9 ovate lance shaped leaflets .Insect Dasia produces horn like galls called Karkatshringi in Sanskrit. Also named as Crab's claw due to crab like insect gall appendages and another English name is East Indian Mastiche tree. Powdered insect galls are administered to sick people suffering from cough, asthma, lung infections and male, female sexual disorders. Karkatshringi is used to increase sperm count and balance menstrual cycle .Latest research has indicated that it is effective against cancer. It needs to be planted in all parks & gardens along peripheries as a reputed medicinal tree with fascinating red pink spring foliage. Karkatshringi is used in Chyawanprash as well for its health boosting curative qualities.

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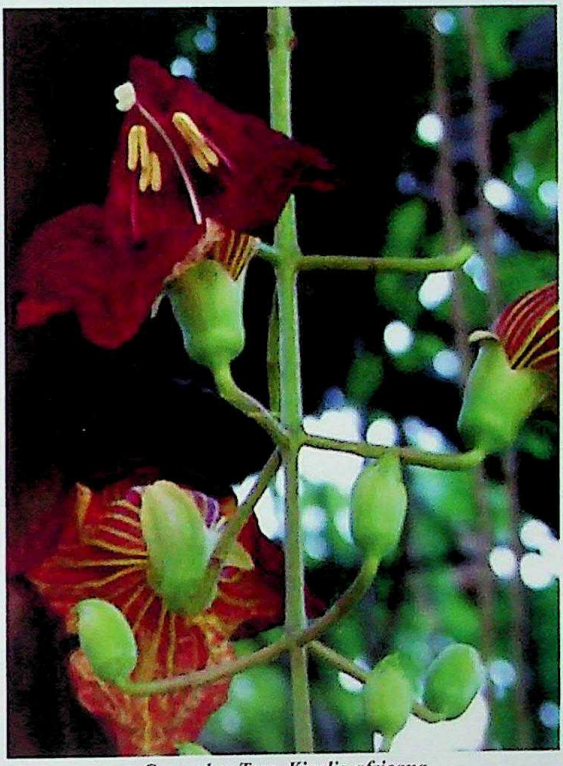
Cucumber Tree, *Kigelia africana eaten* by elephants & baboons



Cucumber Tree, Kigelia africana

My first encounter with African Sausage tree called बालम खीरा, बलम खीरा, झाड़ फनूस अफ्रीकन ककड़ी was opposite Ranbireshwar temple in Jammu city ,tree with hanging ropes supporting deep red flowers and large cucumber like greyish brown fruits.It was new addition to my kitty of trees ,Kigelia African American syn K pinnata from the Bignoniaceae family to which Shyonaka Oroxylum indicum belongs. Its fruits are poisonous to humans but fondly eaten by elephants, Baboons, Hippo-potamuses, Giraffes, monkeys & porcupines. Flowers are pollinated by bats but during daytime bees ,birds also feed on its pollen & nectar. Fruit powder is used in skin ailments and skin care lotions & shampoos. It is anticancerous tree and useful against ulcers and tumours. African women consume its leaves to increase lactation after childbirth. Fruit powder is supposed to contain aphrodisiac properties. Quite ornamental tree but large fruits can accidentally fall on humans & vehicles parked underneath so planting sites need to be selected with care. Fully mature cucumber like fruits may weigh upto 10 kg. Also named as Father of kid bags, it is evergreen tree in wet areas and is deciduous in dry localities. Large number of Kigelias stand planted in the campus of University of Jammu and in Floriculture Parks & Gardens. In Malayalam, it is named as Shiv Kamandlam.

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Interrupted Fern, *Osmunda claytoniana*

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Interrupted Fern, Osmunda claytoniana

First ever encounter with primitive Osmunda fern was way back in 1988 when I scaled Manali Mountains to reach Rohtang Pass in HP. That fern was Osmunda regalis. On recent visit to Gurez Mountains during Ramzan in the year 2016, I encountered Interrupted Fern Osmunda claytoniana named after Botanist John Clayton. Primitive fern appeared in fossils dating back to Triassic period with 180 million years old antiquity. It has remained unchanged and fossil similar to this fern stand discovered supporting the view that it has static evolutionary history and has remained unchanged even in its chromosomal & nuclear structure. As botanical curiosity ,Interrupted fern need to be cultivated in the Botanical gardens to boost its exsitu conservation outside natural habitat zone in temperate forests.It is useful fern to be included in landslide stabilization programmes especially along Batote Banihal Highway stretch. Bipinnate vegetative fronds one metre tall in height on maturity are gracefully interrupted by cinnamon coloured fertile pinnae in between to provide distinct look to the primitive fern distant relative of more familiar edible fern Kasrode sold in Jammu market.

Sweet root Yashtimadhu, *Glycyrrhiza glabra*

Mulathi Plant in flowers

I had not seen plant till recently but always chewed its sweet roots under the trade name Mulatthi to get relief from winter cough Called Yashtimadhu in Sanskrit and Glycyrhiza glabra in Botany, 2 metre tall perennial bear's alternate pinnate leaves and purplish blue butterfly shaped flowers. It is stoloniferous herb and under cultivation in Kashmir where it known as Shangar or Shangri. While visiting IIIM herbal farm at Sanat Nagar Srinagar ,I shot it in flowering phase for the benefit of herbal growers .It is medicinal plant and used in several herbal products ,cough syrups ,useful against skin ailments, respiratory troubles ,it is effective immunomodulator ,antiallergic, hepato protective, lowers cholestrol and also used in flavouring beer ,pipe tobacco & cigarettes. Glycyrhiza glabra is recommended to be introduced in all school & college herbal gardens & Botanical gardens in various universities of J&K.

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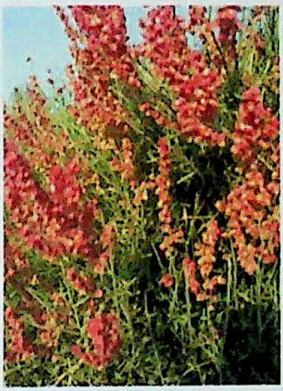
Hastate Dock, Arrow leaf Dock , *Rumex hastatus*, *Polygonaceae*



Arrow leaf Dock, Rumex

Docks & Sorrels herbs containing oxalic acid are edible and taste sour .First Dock ,I relished in life was Rumex hastatus ,arrow shaped leaves I used to eat raw and called Baddi Ammi to istinguish it from another sour herb Oxalis corniculata called Nikki Ammi in my mother tounge Dogri. In Hindi called as Churki , Gojars named Hastate Dock as Khateembar. I felt awesome whenever I encountered it in its autumnal colour of vivid pink red. More decorative when mature fruits get pink red and visitors cannot overlook its bride beauty. Other Sorrels ,I got familiarized with in later part of life were Nepal Dock Rumex nepalensis ,Toothed Dock Rumex dentatus both edible but not so colourful and fascinating as Rumex hastatus .What a Dock with colourful fruiting spikes to add charm to mountain journey and wilderness walk in autumn !

Edible Clear weed *Pilea umbrosa* and Stalked *Dischead Lecanthus peduncularis*

Clear weed Pilea umbrosa / Lecanthus

I being a fond wanderer of woods & riverine locations got many amazing inputs from nomadic graziers and forest food gatherers. On visit to Bani I happen to come across a forest plant growing beside springs & water streams .Succulent stem with oppositely borne nettle like ovate elliptic leaves having flowers borne in branched clusters .I identified the herb as Pilea umbrosa locally called Fander and consumed by hill people. Similar looking another succulent herb Lecanthus peduncularis commonly called Stalked Disc head was also named as Fander by shephards at Bani. Same night on my request I was shown collected Pilea umbrosa foliage with known edibility and can be cooked as pot herb .I recall while in the company of then SDM Bani Ravi Kant Verma ,I got wild Clearweed cooked in the NHPC Guest House Chamera and relished taste of lesser known wild vegetable .Foliage being similar of both herbs Pilea umbrosa (foliage collected,no flowers visible) & Lecanthus peduncularis (Whole plant with flowers on stalked disc),both photoshoots are shared for proper identity of edible Pilea umbrosa locally called Fander in Dogri.

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Sacred Nagalingam, Cannon ball tree, *Couroupita guianensis*

Cannoball tree with fruits

It was at Belur Math Calcutta that I got an awesome glimpse of Cannonball tree Couroupita guianensis, hooded staminal structure in the pink red flower was the Botanical curiosity I had not seen till 1993.Tree trunk laden with flowers and cannon ball like fruits and name I was told as Nagalingam. Later on when its mesmerizing beauty made me more hilarious it was at Tirumala Devsthanam, Tirupati Andhra Pradesh when I visited the temple for pilgrimage during september 1997 .Due to cobra hood like staminal structure ,it is held sacred ,flowers used in the worship of Lord Shiva are called Nagamalli in Telugu and Nagalingam in Tamil. I romanced with this tree 3rd time when I happened to visit Gangtok Sikkim in April ,2010 for the International Rhododendron conference there. 4th love day with this tree got unfolde at Mumbai in the year 2012. HoD Botany University of Jammu tried to grow thi curious tree Couroupita guianensis from the family Lecythidaceae in the Botanica garden but attempt could not fructify, next attempt may get success. What a tree wit cannonball like fruits developed from hooded blooms in plenty!

Brazilian Butterfly Pea Tree, Clitoria arborea

Butterfly Pea Tree, Clitoria arbor

Butterfly Pea popularly known as अपराजिता, गोकर्णी known to me since university days was Clitoria ternatea .Named after female genital clitoris as flower architecture is akin to female part, in Chinese medicine; plant is ascribed to have impact on the organ as per the doctrine of signatures. It was much later in the life that during a Tree Talk interaction with engineering students in Sanjeevaiah Park Hyderabad, I happen to encounter tree like arboreal Clitoria arborea native of Brazil. What a bloom, large sized purplish flower borne in racemes coming out of branches having pinnate leaves, leaflets ovate lance shaped. Planted in parks & gardens of Hyderabad & Bangalore as exotic decorative medium sized tree, I fe amazed to note that within genus Clitoris, habit varied from climber creeper shrub tree and distribution from Asian continent to American continent .What th wonderful ways of plant evolution within flowering plants which coevolved wi insects and diversified during Cretaceous era.

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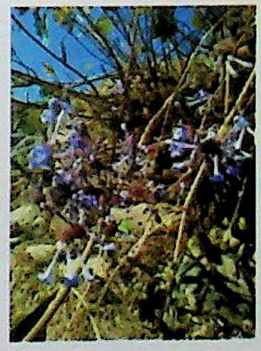
Nitrogen fixing Gunpowder Tree, *Trema politoria* from Hemp family

Gunpowder Tree, Trema politoria

I was not familiar with Trema politoria till I laid my hands on Plant specimens donated to Botany department, University of Jammu by RRL Taxonomist Dr Brij Mohan Sharma who compiled Flora of Jammu in eightees. Then placed in Elm family Ulmaceae or Nettle family Celtaceae, it is now under Rosids and member of family Cannabaceae Hemp family to which more familiar Bhang belongs. Trema orientalis grows in central India but Trema politoria is found growing in Jammu shiwaliks.Commonly called Dandkoochan in Dogri ,its other names in English are Gunpowder tree ,Charcoal tree,Pigeon wood tree .It is a nitrogen fixing tree of poor degraded lands and useful in landslide stabilization .Leaves are with an oblique base ,margin toothed and surface scabrid hairy.Blaze of Trema is red with white streaks ,flowers unisexual.Doves & Pigeons build nests in its growth ,many butterflies too use Trema as larval food plant.Based on genetics studies ,its placement alongwith Nettle tree Celtis australis is in Hemp family Cannabaceae. Tree wood is very good fuel and is made use in charcoal or Gunpowder making in India & Tanzania. Leaf extract is used to cure human ailments.

Stinking Forest Champa *Spermadictyon suaveolens*



Forest champa, Spermadictyon

Blue flowering wild plant named Spermadictyon suaveolens belonging to Coffee family Rubiaceae looks elegant amidst flowerless expanse during autumn & winter.Flowers are fragrant sweet smelling but leaves when crushed emit foul smell and for this reason called Foetida Hamiltonia or Foetida Van champa in English, Guhaadad or Paadadehn in Dogri. Shrub is profusely branched 2 metre tall perennial, leaves opposite ovate lance shaped with intrapetiolar stipules, flowers are borne in umbels arranged in lax panicles. Corolla tube is light blue but lobes are deep blue. On visit to Darhal Rajouri after Dewali, I encountered its blue flowering in the fallow farmlands. In China, it is introduced in parks & gardens, it occurs wild in shiwaliks & Western Ghats and has the promising potential to popularise it as garden ornamental to get colour in the autumn when flowers are rare and colourful tints are seen only in foliage.

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Lac tree Kusum, *Schleichera oleosa* from the family Sapindaceae

Lac tree Kusum, Schleichera oleosa

Sapindaceae family plant, I got familiarised in early childhood was Saintha Dodonea viscose Later I became familiar with Reetha Sapindus mukorosii. On visit to hills & mountains, I got to know Maples & Horse chest nuts. As per APG 3 system of Angiosperm classification, all are in one family Sapindaceae. During autumn leaves of Soapnut & Horse chest nut turn golden yellow and leaves of Maples turn fascinating red. I saw Kusum tree, Schleichera oleosa host of Lac insect Kerria lacca only when I landed in Dehradun ICFRE campus. Later during spring, I came to know that tree stands planted the campus of University of Jammu, its spring foliage rich pink attracted me the mo .What splendour of pink foliage on the onset of spring! Pinnate leaves with 2-4 leafle looked so elegant that tree beauty is cannot be overlooked; flowers are greenish yello and escape notice of casual onlooker. Lac insect thriving on its mature foliage yiel Kusumi shellac which is both medicinal as well as dye .Mature fruits with edible acid aril reminds one of another near relative Litchee fruit where again edible part of fruit fleshy sweet aril. Called कुसुम in Hindi, कुसुम्बा in Gujrati, Gum lac tree or Ceylon O or Lac tree in English, I noticed its more fascinating foliage colouration on Chandiga roads especially inside Punjab University.

Buttercup Primrose, *Primula floribunda*

Buttercup Primrosa, Primula floribunda

My first ever encounter with fascinating Buttercup Primrose, Primula floribunda from the family Primulaceae was during holy darshan of Sri Mata Vaishno Devi temple, golden yellow blooms in abundance on the moist mossy rocks beside the holy cave filled me with eternal bliss. Primula derived from Primus means first to bloom, floribunda means abundant blooming or rich bloomer, golden yellow flowers as if made of gold fascinates visitors & pilgrims. Prior to Primula floribunda, I was familiar with Primulas having rose pink ,maroon purple or blue flowers but sighting of Buttercup Primrose with Buttercup Ranunculus laetus like golden yellow flowers on moist rocks of Trikuta hills was unique in experience. In later years, I happen to notice its gregarious flowering at Baggar near a roadside sm temple. As compared to high altitude alpine Primrosess, Buttercup Primrose grows lower elevation from 800 metres to 1500 metres. Called पीत सेवती in Hindi and कु वसंत in Dogri. Need to be cultivated in flower pots and parks & gardens to help in conservation and propagate knowledge on neighbourhood wild flowers of hills mountains. Enjoy the beauty of spring which has set in across wilderscape!

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Colt'foot plant, *Tussilago farfara*

Colt's foot, Tussilago farfara

While heading to Srinagar on durbar move in may ,I often noticed rich growth of hoof shaped leaves beside ditches, drains, freshly exposed slopes all along from Patnitop to Nashri ,wondering what plant leaves and no flowers .On several other occasions while moving from Batote to Bhaderwah during mid-summer ,I used to see only plant foliage ,leaves green above & white felted beneath. Mystery remained mystery till I travelled to Gurez and found fascinating golden yellow Dandelion like blooms but no leaves ,so it got identified as Colt's foot plant named Tussilago farfara in Botany and चिचिलोटी in Hindi.Tussi means cough and ago means to act ,it has beneficial healing action on cough so named Tussilago .Also known by other names like Bull's foot, Ass's foot, Foal's foot ,it is a herb found growing amidst snow around glacial moraines, flowers appearing before leaves,flowers even coming through snow ,leafless scape woolly haired ,capitula 4-6 cm across. On visit to Bhaderwah on a day of fresh snowfall in february,I happen to see its golden glamour surrounded by maddening Snowscape Roots of Tussilago are poisonous as they contain Pyrrolidizone alkaloids but flowers can be brewed into a herbal tea.As blooms are quite decorative ,plants can be maintained in flower pots for early spring blooms in our parks and herbal gardens. What a mysterious plant, when in blooms different look & when in foliage, different look! Its white felt beneath leaves was once collected dried and used as tinder in earlier days, burnt ash was used as salt.

Kumkum Tree, *Mallotus philippensis*

Monkey face tree with red fruits, Mallotus

Kumkum tree named as Kampillak in Sanskrit, Kaamla or Kamilla in Dogri is commonest tree of shiwaliks. Named as Monkey face tree due to its deep red fruiting capsules, red powder of fruits earned it popular names as Sindhuriya, kumkum, Rohini. Tree belongs to Amla family Euphorbiaceae and has different male & female trees as in Pistacia Vera Pista of commerce. Rufous oriental turtle dove, Streptopelia orientalis locally called Kalmoonha is dependent on its fatty fruits as source of food .Hunters in earlier times used to position themselves in the woods dominated by Kamilla as they knew doves would visit Mallotus for fruits in early dawn. Source of red dye for colouring silk & wool, its fruit powder is mixed with curd and administered to children to get rid of intestinal worms like Enterobium vermicularis .In earlier days,red powder was also used by married women as sindoor on head . Also source of drug Rottelerin, it is named as Dyer's Rottlera.

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Joss flower, Bunch flowered Daffodil Narcissus tazetta

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Bunch flowered Daffodil, Nargis, Narcissus tazetta

I remember village Jandriadi in Ramnagar for fragrant flowering of Bunch flowered Daffodil ,Jonquil, Paperwhite Narcissus tazetta during early spring ,my friends young & old told me fascinating flower's name as Heerminjar in Dogri .Flat tape like fleshy leaves ,long flowering peduncle topped by 3-7 fragrant flowers ,6 white tepals with inner cup like corona ,I felt mesmerized to smell awesome fragrance of Heerminjar. Later in my college days ,I came to know its name as Nargis in Urdu .After visit to Bhaderwah ,I got familiar to its another name Harmunjal ,Harmeenjal and the ethnic input that flowers are used in the worship during Bhaderwahi Kanchauth fast observed for happiness of husbands. In Japan flowers of Daffodils are quite common and are named as Suisen means water wizard as they grow near water .Narcissus tazetta is Botanical name ,tazetta derived from Italian wine cup Tazza as flower corona looks like wine cup.Fragrance is due to aromatic compounds ,orcinol not detected by humans but bees can as found in experiments. In Kashmir, Nargis is called Yamberzal and planted extensively alongwith Irises over graveyards to keep love of departed soul alive. Near Wadura Sopore, there is village named Yamberzal wari after this fragrant flower. William Wordsworth wrote beautiful poems on charming beauty of Daffodils, Narcissus poeticus in particular. I recommend one day Daffodil festival (Yamberzal festival) at Gulmarg to mark onset of spring (sonth) in Kashmir .Flower painting, folk songs perfumery contests, and herbal innovations can be organized & displayed.

Magenta flower, *Dicliptera bupleuroides*

Magent flower, Dicliptera bupleuroides

Magenta colored blooms of Roxburgh's Foldwing Dicliptera roxburghiana var bupleuroides always attracted me whenever I roamed through forest woodlands and shrubberies during spring. Ascending stem with oppositely arranged perennial bears bilabiate flowers in spring .Fascinating flowers provide a decorative look when flowering is at peak.Belonging to Bear's breeches family Acanthaceae, flowers are bracteate and pistil 2-carpellate .Ovate acute leaves are hairy and used in folk medicine against cough & cold .Once on way to Adhkuwari, I met an hermit collecting Dicliptera twigs for herbal use. On visit to Mahanpur Meriyan, I found Dicliptera in full bloom, I photographed Magenta flower beauty to soothe my nerves and colour my emotions in the wilderness.

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Wild pear Batangi, *Pyrus pashia*

Kainth, Batangi, Pyrus pashia

During autumn, I used to relish gritty black fruits of Pyrus pashia ,Himalyan Wild Pear my elders named Kainth in Dogri and Batangi in Pahadi .I noticed even Langurs and monkeys joining the fruit feast in the wilderness .During night time , elderly villagers often used to show me pellets of Himalyan Palm civet Paradoxurus hermaphroditus locally called seendaa telling me that wild cat like civet has eaten Kainth fruits during night. During monsoon season ,I used to pluck unripe fruits ,pierce thorns of Carissa opaca along middle horizontal ring and with a water current used to demonstrate model of the water mill .At the time of Bachh duaa fast ,I used to collect 13 fruits ,one of them Kainth Batangi surely. Pyrus pashia medium sized deciduous tree gets laden with snow white flowers to add charm & glory to wilderness during onset of spring ,petals getting showered one by one in gentle breeze to spread white sheet of flowers underneath .Many bees ,bumblebees, butterflies,birds enjoying floral beauty & pollen splendour .Bark clothed with diverse kinds of mosses ,lichens and foliose liverworts. Unripe fruit juice added to eyes of cattle suffering from conjunctivitis .Elderly folk healers recommended fruit juice to treat stomach troubles. Mature stems used as stock to graft superior pear scions. Wood used as timber for agricultural implements. Food of wild mammals and birds, it is recommended to plant more & more wild fruits for monkeys so that man monkey conflict is reduced. Forest habitats bereft of edible bioresources lead to migration of monkeys to inhabited human settlements.

Blue Scarlet Pimpernel, *Anagallis arvensis*

Blue Pimpernel, Anagallis arvensis

As Vidyarthi of nature,I feel fascinated by blooms of all kinds ,on visit to wheatfields among many flowers one flower which looked blissful to me is Blue Pimpernel ,Anagallis arvensis with deep blue blooms having red centres borne in axils of oppositely borne ovate leaves.In Dogri called as Angarta or ngarta or Anne tadd ,it is called as Jonkmari in Hindi due to the fact that herb powder once used to be put in nostrils of cattle to expel leaches . Also named as Krishan neel, Anagallis arvensis flowers close in the cloudy weather or at sunset earning it other names as Poor man'weather glass or Shephard's clock .Herb is poisonous and its roots contain glycoside Cyclamin found in flower Cyclamen .It belongs to Primula family Primulaceae, was later shifted to Myrsinaceae which as per APG-3 got included later in Primulaceae as subfamily Myrsinoideae. In Kashmir, scarlet Pimpernel is more common as compared to Blue Pimpernel.If grown in a flower pot, compact growth with dense blooms become quite decorative.

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Golden evergreen Raspberry, *Rubus ellipticus*

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Rubus ellipticus in flowers

As village boy, I used to hank cattle alongwith shephards and often used to relish diverse kinds of delicious wild fruits .One of wild fruit soaked deep in my thoughts & emotions is Golden Evergreen Raspberry or Himalyan Yellow Raspberry identified as Rubus ellipticus in Botany. My elders familiar to fruit by the Dogri name Peela aakha ,Aakhra called prickly shaggy haired Rambler as khehdi .I ate its golden fruits while going to & coming back from school at Dhiyadi in Ramnagar.It added to my nutritional kitty and also enriched my tastebuds. In the village ,I learnt folklore associated with hill bird locally called Piyoke bhejo identified as Short winged Himalayan Cuckoo Cuculus micropterus.Story goes that hill girl fond of eating golden yellow raspberries felt sad after she moved to in-laws house in punjab plains where no Aakhre were available to her .She wished to visit Piyoka Maiyaka but as Raspberry ripening time coincided with wheat harvesting season,she could not get permission from in-laws to visit Shiwaliks where Rubus ellipticus grew in plenty .She felt deprivation year after year but could never forget sweet taste of raspberry fruits.As per folklore ,that girl after her death took rebirth in the form of short winged Himalayan cuckoo now known by the Dogri name Piyoke bhejo means send me to mom's house to relish ripe yellow raspberries. Later I happen to read Dogri novel titled Piyoke bhejo written by Dogri novelist Desh Bandhu Dogra Nutan.It reflects rich understanding of biodiversity by the native communities who interpreted wild flowers, fruits, birds in their own way and spread awareness on flora & fauna. Shrub grows in abundance in pine forests ,stem has growth of brownish purple bristles ,leaves are pinnately divided into 3 round orbicular leaflets,flowers are white with 5 free petals and many stamens .Fruit an eterio of achenes gets ripened during March April. On visit to Mahanpur village in Kathua district, I got Rubus ellipticus in flowering,I got reminded of my childhood days and felt nostalgic about bird Piyoke bhejo . In Hindi ,fruit is called Hinsalu ,Aanshu or Gauri phal .Fruits can be made into a herbal juice ,fruit Jam ,Raspberry candy ,Ice cream with health benifits .In Nepal,Anshu wine is also brewed .It need to be shortlisted for cultivation to go for value addition .Its root alongwith root of Girardinia diversifolia recommended as herbal tea against cough troubles.

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Bollywood Tree- *Litsea glutinosa*

Litsea glutinosa tree, Meda sakk

Lauraceae, family of pleasant smelling fragrant trees is familiar to all of us by way of cinnamon Dalchini used in tea making & several other cuisines. My maternal uncle's house was located near oak Rhododendron forest and my granny showed me close relative of Dalchini called Tejpatta in Hindi or Tajpattar in Dogri and Cinnamomum tamala used in pulao during marriage parties. Another Laurel I was introduced by my elders at village Rang Balhand was Litsea glutinosa called Rehan in Dogri .Later I noticed same tree at Kalakote Rajouri where locals named it Meddasak.Here I was told that its bark is dried and powdered and made into halwa which heals wounds & fractures. On visit to Phalata village next to Maand ,I saw its trees in plenty and got the input that pleasant smelling aromatic leaves are eaten by cattle and is familiar as fodder.It is also known as Bollygum,Bolly beach ,Bolly wood,Brown Beech tree.Its powdered bark can be used in incense making as well.Leaves are elliptic oblong ,softly hairy on both sides ,emit sweet fragrance when plucked and crushed .Leaf decoction is medicinal and recommended by folk healers. Today on visit to Mahanpur ,I noticed its tree growing with Mallotus philippensis and Pyrus pashia trees ,got it photographed for familiarity among city dwellers and Bioresource managers.Tree need to be included in college herbal gardens as medicinal aromatic tree ,it can be raised through cuttings as well as seed .

Lesser known *Hawksweed, Youngia japonica*

Hawksweed, Youngia japonica

Hawkweeds are yellow flowering plants in the Dandelion tribe of sunflower family Asteraceae .Botanically put under Genus Youngia in 1831 by Cassini ,it later clubbed under Crepis but Youngia stands revived again. Biennial herb with radical leaves pinnately fid ,slender stem less leafy ,flower heads golden yellow . Endemic Youngia nilgiriensis Nilgiritragus Hawkweed from Sispara Tamilnadu is threatened with extinction and is already entered in the Red Data book. Natural habitats when disturbed & planted with decorative exotics, native flora gets eroded, plants like Youngia nilgiriensis need undisturbed habitats to perpetuate their genetic design.

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Red Silk Cotton Tree, *Bombax ceiba*

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Red silk cotton tree in flowering, Bombax

Bombax ceiba is accepted binomial name of Semal tree called Shalmali or Yamdruma in Sanskrit and Simbal in Dogri. Previously named after Sanskrit name Shalmali as Salmalia malabaricum, species referred to Malabar region. Red Silk cotton tree name connotes presence of silky hairy growth on seeds in a mature capsule, infact seed silk is used in stuffing pillows & cushions. Tree's name Yamdruma refers use of its thorns by Yama to torture wrongdoers in seven hells. As per Hindu mythology creator of world Pitamaha rested under this tree, red fleshy cup like flowers are sacred to Shiva ,full blooming tree is akin to goddess Lakshmi . Deciduous tree sheds its leaves in winter before flowering in spring. As per legend , Naradmuni asked it why it looses no leaves, is Pavana befriended it, Semal then replied proudly that it is due to its strength not because of Pavana. Narad told Pavana what Semal said, so furious Pavana approached with hail, sleet & storm but before wind attack, Semal voluntarily shed its leaves and stood humbled in repentance, so Pavana returned its elegance. Semal now sheds leaves to remind itself of the mistake it did . Medicinal roots boost body strength, flowers used in soups, unripe fruits edible and eaten by villagers. Prickles are powdered and applied on acne. Many birds like Flower peckers, starlings, Mynas, crows, sunbirds, drongos find feast of nectar, sugars, pollen in its flowers and in fact Hornbills also select Semal trees to make nests in its soft wooded trunk. In Rajasthan Semal sapling or pole is used as replica of Holika, woods are accumulated for holy bonfire on the eve of Holi to perform ritual of Holika Dehan. On visit to Kathua and Katra ,I noticed initiation of flowering well in last week of January but in SMVDU campus its flowering is at its peak.Flocks of birds are visiting and enjoying floral feast amidst clouds and light drizzle of february.

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Saw-wort, Sussurea heteromalla seen from plains to mountains

Saussurea heteromalla in flowering

De Candolle named Genus Saussurea, plants grow mostly on mountain peaks ,temperate forests and reputed medicinal plant of J&K called Kuth in Dogri Pahadi or Minaal in Shina or Kushtha in Sanskrit is Saussurea costus .Sacred snow lotus Saussurea gossypiphora and Brahm Kamal Saussurea obvallata are sacred plants with rich folklore. On visit to SMVDU, I photographed Saussurea heteromalla syn S candicans growing in wastelands around wheatfields, its pink purple heads reminded me of its Dogri name Lheh or Lheh zeera fond of growing with wheatcrop during late winter. Latest investigations have found useful phytochemicals in this Saussurea ,I wonder if useful genes from Kuth can be put in this low altitude Saussurea to get aroma and healing quality present in roots of Kuth Saussurea costus .Undersurfaces of leaves in some taxa and whole plant in other taxa are covered with cottony wool to protect Saussurea plants from frost & snow in alpine situations .Saussurea is a genus with morethan 300 species worldwide and 24 species in the North western Himalaya but among all ,only Saussurea heteromalla grows abundantly in Jammu & Punjab plains.

Winter Jasmine Magh Mallika *Jasminum multiflorum*

Kund, Jasminum multiflorum

Jasmine flowers usually bloom during spring or monsoon months but one Jasmine called Magh mallika in Sanskrit, Kund in Dogri & Jasminum multiflorum in Botany is different, it blooms luxuriantly during winter, it blooms so elegantly during Magh that it got is name as Magh mallika or Magh kund. Kund is sacred to Vishnu ,its flower buds pinkish white simulated with beautiful teeth in literature ,flowers snow white , Indian phrase as snow as kund is more apt than western phrase as white as snow .As it blooms in so abundance that all foliage get covered by flowers ,it has been named as Jasminum multiflorum . In Dogra culture, its flowers used to make garlands for marriages, even bridegroom's forehead sehra used are innovated with its white blooms. In Manipur, bride puts two Kund garlands in groom's neck, one garland taken out by groom and put in bride's neck to solemnize marriage. What a luxuriant bloomer our sacred Kund is, it need to be grown along walls and main entrances to our temples of learning!

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Sunshine Tree, *Tiger's claw Erythrina indica*

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Sunshine tree, Erythrina variegata

It was at Ramnagar in late seventees that I got to know spectacular luxuriant bloomer wild tree Thubb as known to Dogras. After joining GGMSc college Jammu ,I was blessed with its elegant blooming during early spring, crows, drongos, Mynas, Starlings ,Tits, Flowerpeckers, Rosy pastors not only visted but sipped nectar on the sunny mornings while I entered college from Jewel chowk. Botanically called Erythrina variegata ,its twigs have sharp prickles ,flowers brilliant red ,standard erect borne in racemes .It has pinnate leaf made of three leaflets like Butea but smooth green and less leathery in comparison. It is a nitrogen fixing ornamental tree called Coral tree ,Tiger's claw or Sunshine tree seen planted at Jammu Guest house ,University of Jammu. As tree bears blood red flowers ,its clusters akin to Tiger's claw ,it was Dogra rulers's wisdom to plant it infront of Bawe wali mata temple which was unceremoniously cut recently by managers. On visit to SMVDU ,I noticed its red flowering on leafless twigs & boughs as in case of Red silk cotton tree . Cock's spur Coral tree Erythrina crista gallii is National Tree of Argentina and national flower of Uruguay ,also planted in India but our Thubb ,Dholdhak, Pangar flower Erythrina indica is not less signficant , patronaze to its planting in historical heritage buildings like Bawe mandir ,Guest house ,Prince of Wales college bears testimony to it .

Bluebeard bush, *Caryopteris odorata*

Blue beard, Caryopteris odorata

It was at Mansar that I got attracted towards blue flowering bush Caryopteris odorata, light blue blooms with stamens outrolled like moustaches.Locally called Chingari, Angari, Patgedi ,it has ornamental value like Buddlejas .Caryopteris & Buddlejas both are loved by butterflies and I too developed romance with fragrant blooms . On way to SMVDU, I got good glimpses of golden Basant, Piyuli Reinwardtia before drizzle and had romance with flowering Blue beard Caryopteris odorata amid light drizzle from Trikuta clouds. Caryopteris odorata bush with decorative value for our parks and gardens have been researched extensively by scientists working in Lahore and have found extract of bush useful in countering harmful effects of free radicals as plant is rich in antioxidants and can be used as promising source of phytochemicals. I recommend shrub as wild ornamental introduction in parks & gardens and as medicinal introduction in college herbal gardens .Its cultivation will aid in its exsitu conservation which is required as shrub is being displaced by exotic Lantana camara in Shiwaliks in H.P.

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Parijat, Tree of sorrow, *Nyctanthes arbortristis*

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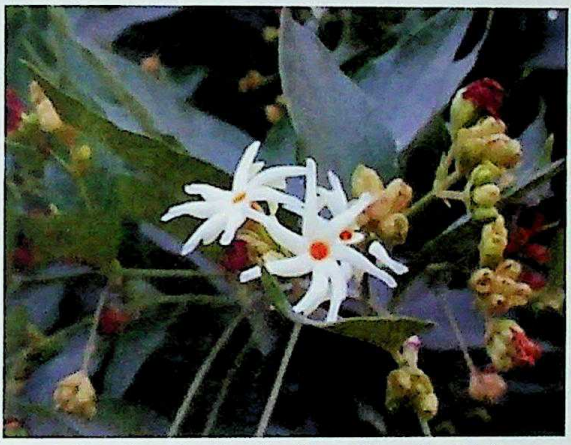

Night flowering Jasmine, Nyctanthies arbor-tristis

Tree with scab rid oppositely borne leaves ,fragrant white flowers with red orange centres opening during dusk and falling down at dawn has rich folklore and revered in Hindu mythology. Parijat in Hindi ,it is Shefalika in Sanskrit ,Sheuli in Bangla & Assamese,Gulzafri in Urdu ,Harshingar in Punjabi ,Koori in Dogri got its Botanical name Nyctanthes arbor tristis which means Night blooming tree of sadness as flowers loose brightness daytime and charming elegance fragrance is not seen daytime but during night hours. As per Puranas,Parijat shrub or tree appeared during sagar manthan,great churning of milky ocean,tree taken to heaven and planted in Indra's garden.Naradmuni presented one flower to Krishna at Dawarka who presented Parijat flower to queen Rukmini .Narad whispered in the ears to make Satyabhama believe she stands discriminated by Krishna and she demanded whole tree to be brought down from heavens .Krishna had no option before obstinate Satyabhama and brought Parijat to Dawarka .Tree is held sacred by Hindus as well as Buddhists .Flowers yield red brown dye which was used to dye monk's robes since ancient times.Parijat is state flower of West Bengal .Leaves & flowers are edible ,used in the formation of local cuisines in Bengal and Assam.Flowers can be brewed to have herbal Parijat tea which is rich in antioxidants and good for liver.Leaves are recommended in the treatment of arthritis and sciatica by Ayurvedic practitioners. Nyctanthes arbor tristis grows wild in Shiwaliks, it is planted as sacred ornamental shrub in temples & gardens. Tree need to be included in herbal gardens to have its conservation, multiplication and plantation outside natural habitat. What a tree Nyctanthes arbor tristis called Parijat in mythology!

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Edible Dead nettle, *Lamium album*

Lamium album, Dead nettle

Stinging nettles are notorious to give painful sting but belong to genus Urtica in the family Urticaceae .Dead nettles are akin to Urtica in leaf phyllotaxy & morphology but do not sting ,belong to genus Lamium in the mint family Lamiaceae.Both Urtica & Lamium are however edible and can be cooked as vegetable. In my childhood days, I tasted Henbit Dead nettle Lamium amplexicaule with stalkers round leaves in pairs and purplish maroon 2-lipped flowers as vegetable on several occasions. During field visits to Gurez and Kajinag in north Kashmir,I found white flowering Dead nettle Lamium album ,leaves similar to Urtica but flowers 2-lipped.

Mexican Prickly Poppy *Argemone mexicana*

Prickly Poppy, Argemone mexicana

First Poppy I became familiar was not Papaver somniferum or Papaver orientale but Argemone mexicana which my elders used to name as Peeli Kandiyari .Later on visit to Katra ,I got its another name Satyanasi .It was interaction with Sanskrit scholars,I got familiar with its Sanskrit name स्वर्णक्षरीरी as it exudes golden yellow latex क्षीर । I used to notice its plants on temporary garbage dumps and recently disturbed soils .It is a plant with ability to grow on poor soils and is usually seen in wastelands and roadsides .One metre tall prickly herb ,leaves with whitish green midrib area and remain stem clasping as they lack stalks.Flowers 4 petaled ,petals early falling,stigmas maroon red,capsule contains seeds which look like Brassica nigra and used to adultrated sesame or mustard oils which cause health complications.In late 90' India experienced Argemone oil adultration leading to outbreak of dropsy disease . In Ayurveda, extract of plant is recommended for the treatment of jaundice, skin eczema, psoriasis, ringworm disease. Quite decorative poppy with medicinal uses under Ayurveda.Its allied species Argemone ochroleuca is also seen growing in wastelands but flowers are whitish or dull yellow.Roots of Argemone are recommended in impotency but usage recommended under the supervision of ayurvedic practitioners as plant is reported to be toxic and need to be used with care .

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Apomict *Dandelion, Taraxacum officinale*

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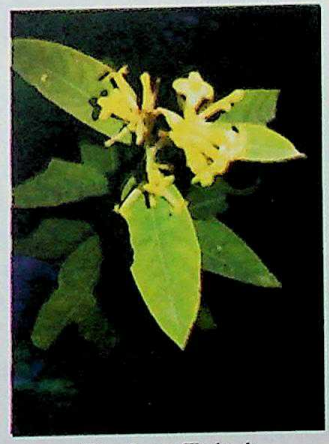
Dandelion Flowers, Taraxacum officinale

Among spring blossoms ,golden flowers of Common Dandelion Taraxacum officinale stand out prominently in our lawns,meadows,wet channels and apple orchards .Commonly called Lion's tooth,Blow ball,Puff ball ,Dandelion have unbranched tap root with several basal leaves and few flowering stalks topped by compact capitulum made of florets .Leaves are shallowly divided along the margins,flower heads visited by bees,butterflies but Dandelion is apomict plant due to triploidy and produces seeds without sexual fertilization .Fruits are cypsalae with Pappus of grey hairs to adopt parachute mechanism of seed dispersal. Most nutritious herb ,leaves are used as pot herb or as salad ,flowers can be made into a herbal tea or Dandelion flower wine .Roots can be consumed as vegetable or boiled to get Dandelion root tea or soup ,alternatively roots can be roasted, powdered and used as coffee with many health benifits. In Kashmir & Kishtwar, Dandelion leaves, roots,flowers are called Hand or Handri and dried for winter use .In Hindi it is called दुग्धफेनि। Many Lepidopteran insects, butterflies visit its golden blooms but cause no pollination as plants perpetuate through apomixis.

Fibre yielding poisonous *Wikstroemia canescens*



Himalayan Tie bush, Wikstroemia comescens

Wikstroemia canescens from the family Thymelaeaceae is a mountain poisonous shrub with slender branches and yellow tubular flowers borne in umbellate clusters. While roaming in Chenani mountains, I was told its Dogri name as Tartaang but on visit to Pancheri Lander, I got its another vernacular as Chamlakh. Its Hindi name is Chamliya. Also called as Himalyan Tie bush or Himalyana string bush, Selago shrub,it yields strong fibre and can be used for making paper.Cattle avoids grazing browsing due to its poisonous nature .Wikstroemia fruticosa found in Brazil has white flowers.

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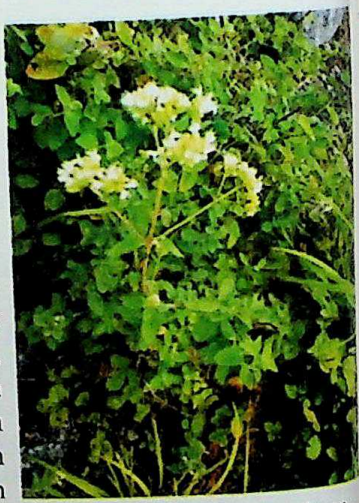
Edible fascinating Self heal *Prunella vulgaris*

Kalveuth, Prumella vulgaris

Most common during monsoon, fascinating flowers of Prunella vulgaris hued in deep purple and borne on squarish dense cluster with opposite leaves and decumbent rooting stem always caught my eye whenever I roamed in mountains & meadows. Belonging to mint family Lamiaceae ,commonly called All heal ,self heal,Carpenter's weed is reputed medicinal herb useful against cough ,cold and lung infections.Flowers rich in flavonoids cynadin,Delphinidin, vitamins ,can be brewed into a herbal tea.Tender shoots can be used as salad or cooked as potherbs. Prunella vulgaris is called Kalveuth in Kashmiri, Kala pethu in Dogri and can be made into tea, sherbat, pulao or pakauda with health benefits.

Aromatic Wild Oregano which attracts *pollinators*



Wild Origano, Origanum vulgare

Wild Origano identified in Botany as Origanum vulgare is a mint family mountain herb with opposite ovate leaves and flowers borne in dense clusters at axils and at tops. While on pilgrimage visit to Machail mata temple in Paddar Kishtwar, I noticed its rich growth in grasslands and mountain slopes, I found i growing in Dachigam national park and Kajinag National park in Kashmir. Sweet Marjoram Origanum majorana is cultivated, dried leaves and flowering tops are used in preparation of various cuisines especially in Greece & Italy.Oregano herbal tea is traded in the market and is recommended for its health benefits. Herb is known as Marua in Dogri, Van babbar in Kashmiri and Maruvaka in Sanskrit.

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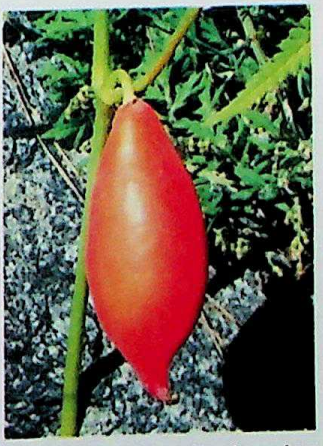
Agamid *Laudakia himalayana*

Agama himalyana, Kaingat

I used to observe reptilian Agama himalyana now named Laudakia himalyana locally called Dalheda in Dogri ,Kaingat in Paddri .Usually seen basking in the sunshine on big boulders and rocks in and around riverine habitat. Flattened head, body with long tapering whip like tail looked like miniature Monitor lizard again used to be common. Dinosaurs were monster reptiles during Jurassic era, now represented by fossilized remains, Lizards agamids their modern descendants alongwith colourful birds. During visit to Kajinag National Park, I got pictures of Agamid captured for the thrill of wildlife enthusiasts.

Anticancerous May apple *Sinopodophyllum hexandrum*



May apple, Sinopodophyllum hexandrum

It was during Gurez mountain visit that I noticed luxuriant growth of anticancerous Sinopodophyllum hexandrum plants ,twin leaves dissected with a single white pink flower in between .It was month of May and May flowering was at its peak all around in & around birch trees from Razdhan to Zatkusi to Dahi nala to Kanzalvan to Dawar Chorvan. Called Van Kakdi in Dogri ,Van Wangun in Kashmiri ,Denmokushu in Ladakhi , Shamadoh in Shina,Giriparpat in Hindi & Vantripushi in Sanskrit ,its rhizome used to extract Podophylline ,Podophyllotoxin to treat cancer .Fruits are pink red and edible ,can be developed into sauce . During monsoon visit to Kazinag National Park known for Markhor habitat ,I encountered mature fruits of Sinopodophyllum hexandrum which are shared for awareness of nature lovers and conservationists who may like to grow its seeds for ex-Situ multiplication & conservation in the herbal gardens at mountain tourist destinations in J&K.

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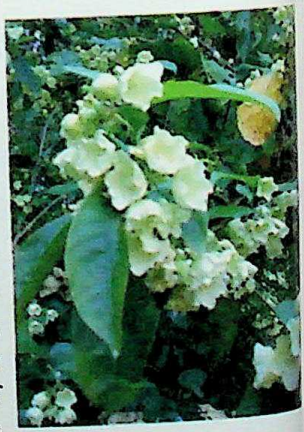
Anticancerous *Vincetoxicum arnottianum*

Apocynaceae member Vincetoxicum arnottianum syn Cynanchum arnottiana with opposite leaves and dark red flowers is found in lower hills around Chenaini ,Udhampur,Reasi,Ramnagar and across LoC at Swat,Kaghan,Hazara hills. As per research carried out in Pakistan, Vincetoxicum arnottianum and Berberis orthobotrys have shown active efficacy against cancerous cell lines.Plant is used in folk medicine in the treatment of skin ailments ,body tumours and diabetes . Attempt need to be made to screen plants for anticancer or antidiabetic efficacy as Vincetoxicum has promising potential to be a useful herb for future.

Vincetoxicum arnotlianum in flowering

Fragrant Bread flower, *Vallaris solanacea*

I felt fascinated to know Fragrant Pandanus like fragrance in laticiferous climber Vallaris solanacea from Apocynaceae with bowl like white flowers in bunches attracting butterflies and birds. Leaves borne in opposite pairs,Vallaris solanacea is called Dudhibel ,Ramsar in Hindi and Bhadrvalli in Sanskrit .Dogri name as told by Shephards is Kanak bel .Fragrance is due to 2-acetyl pyrroline molecule which exists in both Pandanus and Vallaris and has similarity to Basmati rice odour . Commonest shrubby vine in the dry deciduous forests of shiwaliks which need to added to parks and gardens .It is decorative vine suited to be grown along fence or trellis.



Bread flower, Vallaris solanacea

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Unwanted weed *Golden Crownbeard* Cowpen Daisy *Verbesina encelioides*

Golden Crownbeard, Cowpen daisy ,Butter daisy, American Dogweed, South African Daisy belonging to Sunflower family Asteraceae was nowhere in Jammu city till turn of century . All of a sudden it invaded wastelands around Railway head, Bagh e Bahu and now it is dominant weed in Jammu. It is yellow flowering Verbesina encelioides, capitulum 8-10 cm across .It has allelopathic effect on native plants and due to its colonization, economically native plants like Tephrosia purpurea, Boerhaavia coccinea ,Cassia absus, Asphodelus tenuifolius, Silene conoidea showing decline in their population count. Lantana camara & Parthenium has already colonized agricultural lands & wastelands and now Verbesina encelioides has joined hands with Panjphulli ie Lantana & Gajar ghas ie Parthenium.

Cowpen Daisy, Verbesina encelioides

Himalayan Nutmeg *Leycestria formosa*

I recall my visit to picturesque Noori Chhamb next to Bufliaz Poonch along Mughal road when I found one of rare plant Leycestria formosa fondly called Pheasant berry,Himalayan Nutmeg,Flowering Nutmeg .1 to 2 metre tall hollow stemmed perennial with opposite leaves ,small white flowers subtended by maroon purple showy bracts.What an elegance of wild shrub belonging to family Caprifoliaceae. I had input of its occurrence in Poonch area as reported & collected by field Botanist Prof H S Kiran but self sighting near Noori Chhamb was quite thrilling .Before Noori Chhamb,I had seen this shrub growing at Village Sohal Gulabgarh in Padder when as Regional Director J&K state Pollution control board I visited the location and locals named Leycestria formosa as Pachhkar due to use of its fluted stems as Holi ki Pichhkari . What a fascinating wild ornamental bush but alas,no gardener or forester have yet tried its cultivation in parks ,gardens or nurseries to help in its conservation outside natural wilderness areas like Noori chhamb Bufliaz or Paddar Kishtwar. Photographs taken at Noori Chhamb are shared for the bliss of conservationists and gardening enthusiasts with a hope that wild ornamental bush will be introduced in parks & gardens in Jammu city.

Himalyan Nutmeg, Leycestria formosa

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Antidiabetic Queen'Crape Myrtle, *Lagerstroemia speciosa*

Lagerstroemia speciosa in flowerin

I was familiar with Panjtara Lagerstroemia indica at my native place Ramnagar, trees were planted at local mosque, pinkish bark ,pinkish crumpled flowers looked elegant like twinkling stars . I saw Giant Crape Myrtle only after I migrated to city of temples, I saw this outstanding bloomer at Ranbireshwar temple & later in University of Jammu. Lagerstroemia speciosa called जारुल, जर जोल in Hindi also named as Pride of India from the Hinna family Lythraceae. Tree leaves are consumed as vegetable in Vietnam, leaves made into antidiabetic herbal tea in Philippines and fruits used as medicine in India. Mauve pink flowers are borne in erect panicles, each flower 6 petaled majestic and flowering attracts visitors Called Tamhan in Marathi langauge, it is state tree of Maharashtra and extensively grown in parks & gardens of India. On my visit to Chandigarh, captured its beauty in Garden of Fragrance.

Jintoi, *Himalayan Prinsepia utilis*

Prinsepia utilis laden with fruits, Rawa

Jintoi flowers are searched by Bhaderwahi married women on the festive occasion of Kanchauth,it was told to me by my wife on one Valentine's day highlighting the fact that in earlier days ladies observed fasting for happiness and long healthy life of husbands and used Jintoi flowers during winter when hardly any other flower is around.Due to change in lifestyle ,now flowers of Harmunjal or Heerminjar ,Nargis are also used by ladies. I recall my childhood days spent at my granny's house mountain village Ratahaal where it used to grow in abundance,called Ruaadi Dogri and spiny bushes used as village fence .On visit to Himachal Pradesh ,I hea its name as Bhekhal .It bears white flowers and deep blue fruits once exploited f edible oil extraction by villagers in earlier days.Seed oil is medicinal and used treat joint pains and swellings.Its live hedge fencing need to be popularised amo rural folk .

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Woodfordia fruticosa, delight of flowerpeckers

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Lythraceae plant family has a fascinating shrub Woodfordia fruticosa ,I became intimate with this charming elegant bush early in my childhood .I loved its pink red blooms for the simple reason that it supported nectar filled tubular blooms and I sipped its sweet nectar like a flower pecker bird. Locally known as Dhaayi in Dogri ,it bears opposite leaves ,undersides heavily black dotted ,flowers are borne in axils ,tubular calyx tube with tiny corolla lobes and epipetalous stamens protruding like a brush .It grows on dry rocky hills and because of firey flowering ,it is named as Fire flame bush .Its Malayalam name is Thathirippuvu and many birds sip its nectar during hot summer. In Ayurveda,it is known fermenting agent in alcoholic drug preparations and useful medicinal shrub.Flower powder is recommended to diabetic patients.It is shrub of degraded Kandi belt and assessed as vulnerable due to habitat destruction and overharvest for fuelwood collection. Woodfordia flowering adds colour to our parks and gardens and need to be cultivated in herbal and flower gardens at all tourist destinations in Jammu region. While going to Srinagar, I happen to embrace Woodfordia flowering, I captured its beauty for nature lovers.

Woodfordia fruticosa in flowering, Dhataki

Golden *Meadow saffron, Colchicum luteum*

Colchicum luteum called Autumn crocus or meadow saffron or Naked ladies is poisonous mountain herb with underground oval corms, underground ovary, long style and no leaves at the time of flowering which takes place early spring. Popularly known as हिरण तूतिया in Hindi, Suranjan in Sanskrit, it is called Virkeom in Kashmiri, सुरुंजां in Dogri. It is source of colchicine used in studying cell division as it acts as spindle poison .It is used in the treatment of several ailments like gout, rheumatoid arthritis, constipation, fever and skin ailments. I saw its blooms in Seer nursery in 2006,its golden beauty in snow was captured by me at sungli Bhaderwah in 2015 during one of Tree Talk session .

Colchicum luteum flowers, Suranjan

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Sorrowless Tree *Saraca asoca*

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Saraca asoca with foliage

I used to see full Ramlila during Navratras coming in october november least knowing which tree is associated with Ashok vatika .It was in later years that I came to know about Polyalthia longifolia which was planted in city parks and palatial bungalows little knowing that it is again False Ashok and not true Ashok of Ashok vatika. True identity of Sita Ashok as Saraca asoca syn S indica was understood when I saw its tree in flowering at IIIM Jammu .It is an endemic rain forest tree of India found in eastern ,central Himalayas and middle western Ghats belonging to Amaltas Cassia fistula family Caesalpiniaceae.Its leaves are pinnate, coppery maroon when young and fabulously drooping.It bears orang yellow blossoms later turning bright red and flowers arise directly from tree trun or woody branches ie it exhibits cauliflory unlike Amaltas. It finds mention i Ramayana ,Hanuman meets Sita in the garden of Saraca asoca trees growing in th Ashok vatika in Sri Lanka where Ravana had kept Sita after her abduction a Panchami. As tree blossom glory and Hanuman's meeting brought great relief t Sita, tree got its name as Ashok means that takes away grief or dilutes sorrow, s Ashok tree got its English equivalent as Sorrowless tree .Polyalthia longifolia go the name as Devdaru or Ram Ashok in comparison to Saraca asoca as Sita Ashok Hinduism & Buddhism have nurtured religious significance to this tree ,it got it inclusion in Indian art ,sculpture ,painting and religion .Motif of Yakshini wit Ashoka tree is symbol of fertility ,so young girls with foot on its trunk holdin flowering twig in hand got imbibed into Indian rituals and got reflections in ar ,sculpture and painting.Ashoka is worshipped during Ashoka festival durin Chaitra month ,tree is associated with marriage rituals in Maharashtra .It is amon five flowers in the quiver of Kamdev God of love .Tree has been planted in parks & gardens extensively ,its 64 plants seen planted in the Floriculture's Sohan Sing Park at Gandhi Nagar Jammu. Oldest Sita Ashok is seen planted at Gyankund Chadai near Tikri Jammu .It is useful in various gynaecological disorders ,it i named as Gynaecological tree ,its flowers ,leaves,bark are medicinal and used t treat diseases in Ayurveda .It need to planted in each herbal or botanical garden a well as in all Floriculture parks and gardens including city greenbelts so that tre gets conserved outside natural habitat where it is facing extinction .

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Indian Squirrel Tail bush *Colebrookia oppositifolia*

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Colebrookia oppositifolia in flowering

One of more familiar medicinal bush known to villagers and folk healers is Colebrookia oppositifolia .Member of Mint family Lamiaceae, flowering panicle look like squirrel's hairy tail so named as Indian Squirrel tail, its Dogri name is Chitti Suhali, Hindi name is Binda, Bhirmoli or Pansara . Village folk use its leaves to get relief from headache, giddiness and nose bleeding during scorching summer when hot winds blow. Indian Institute of Integrative medicine scientists have recently discovered its hepatoprotective efficacy and have innovated new pills effective against liver disorders.

Rangoli lata *Deerengia amaranthoides*

What a fascinating elegance of Rangoli lata also called Latman or Kala luhari when scarlet red ruby like berries get decorated on the slender branchlets during desolate autumn .Called Paringeya in Dogri ,Deerengia amaranthoides grows in Shivalik dry deciduous shrubbery ,flowers are white borne in racemose clusters .Once it was assigned to Achyranthes & Celosia as well. On visit to Bhoond in Basohli, I captured its mesmerizing beauty just before vasant panchmi. Can find inclusion in city parks & gardens as decorative Rangoli lata to add charm and glory during dull winter.

Red fruits of Deerengia, Paringeya

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Critically endangered shaggy *Arnebia benthamii*

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Kaahjawain, Ratanjot, Arnebia benthamii

What elders used to name Ratmundi or Ratanjot ,it reflected red roots of a critically endangered high mountain herb Arnebia benthamii .Word Arnebia has its origin in Arabic Arneb ,and Kashmiris are familiar to it by the name Kahjawain or Gaozawan as its shaggy floral spikes are used to get Gule Gaozawan ,a cardiac syrup with many healing properties. It took me almost 50 years to get its glimpse in natural wilderness; it was location beyond Chakwali on way to Kabulgali in Tulel area of Gurez that I cried in joy, jumped out of vehicle to be beside such a reputed medicinal plant which grows in isolated arid locations beyond 12000 ft elevation. Arnebia which I noticed at Karzok near Tsomoriri in Ladakh in 2004 was Arnebia euchroma locally called Demok. Another Arnebia I noticed at Basantar Bela at Samba was Arabian Primrose Arnebia hispidissima .Prophet flower Arnebia grifithii or a echoides I have not seen so far. Arnebia benthamii also grows at Ragini mountain beyond Farkian top, at Seoj dhar in Bhaderwah and in Padder mountains but populations are in sharp decline due to overharvest and overgrazing .Its use in ayurveda and Unani is well documented. Root dye contains Shikanin ,alkanin and being lipid soluble used in colouring fabrics, cosmetics and hair oils. Its cultivation is being promoted in several herbal gardens in north western Himalaya and presently herb is on the verge of extinction.

Sweet smelling *Acorus calamus*

Acorus calamus plant

I started learning folk taxonomy much earlier than Binomial Linnean Taxonomy so Dogri name **बरेयां** was known to me for sweet sedge, sweet flag, sweet myrtle botanically identified as Acorus calamus. At several occasions, I plucked its tape like erect leaves to smell its pleasing fragrance to fill my emotions and thoughts without knowing that marsh herb is used by singers to soothe hoarseness of their throats due to long hours of singing. It used to grow in abundance near Beermaan bridge of Udhampur, Gajansoo area near Nagbani, Sudhmahandev area along water courses leading to fields or water mills. I am reminded of old Himachali saying that - **जित्थें उग्गे बनहां, बसूटी ते बरै, उत्थें माहनू रोगे ने कियां मरै** । Himachali name of sweet flag is **बरै** । Its Kashmiri name is Vai (Vaigundar), Bhaderwahi name is Naglachh, Dogri name is Bareyaan and Sanskrit name is Vacha. Acorus calamus is endangered aromatic herb used in aromatherapy, as anthelminthic and need conservation measures on war footing.

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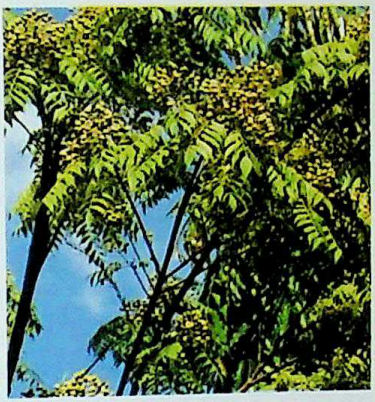
Iron rich wild curry patta *Murraya koenigii*



Daraunkal, Curry Patta, Murraya koenigii

Murraya koenigii locally called Daraunkal or Drhainkadi in Dogri ,curry patta or meethi neem in Hindi is commonest shrub of degraded Shivaliks alongwith Justicia adhatoda Adusa & Carissa opaca Karaunda. Curry patta rich in iron and other nutrients affords health benefits to communities dwelling in forest fringe villages. Tamilians use its leaves in rasam preparation and in sambhar alongwith Drumstick pods. Shrub bears alternate pinnate leaves and white flowers in terminal corymbs.It grows abundantly in wastelands but its inclusion in value added forest food cuisines would be a welcome step to improve poverty and nutrition as per UN declared Sustainable Development Goals 2030. Due to presence of alkaloids like Mahnimbine ,Koeninimbine and aromatic compounds ,it is used in various cosmetics like body lotions,massage oils,facial packs in spas .

Elegant Cock's comb *Celosia cristata*

Cock's Comb. Celosia Cristata, Maval

As Van Vidyarthi, while exploring Jammu flora ,I came across Celosia argentea as escaped natural herb but on visits to parks & gardens I familiarised myself with elegant Cock's comb Celosia argentea var cristata fondly called as Kalga by Jammu gardeners. When I happened to know from Kashmiris ,I came to know that it is called Maval in Kashmiri and is source of food dye commonly used in preparation of Kashmiri food Wazvaan .It is sold in the market at many locations especially at Bori kadal. Celosia cristata forms thick flattened floral heads in varied shapes and sizes and its red coloured flattened floral heads look akin to Cock's comb so its name as Kalga .It belongs to Amaranth family to which our familiar Ganhar or Siyool belongs . During Forest Food Festival at Institute of Hotel Management Rajbagh Srinagar on 4th October 2015, Yaseen Reshi innovated Maval cookies .It is popular garden ornamental in Jammu but it is linked to Wazvaan in Kashmir. Recently I happened to visit Dr Shehnaz Taing's drawing room at Rawalpora Kashmir and was spell bound to see dry Celosia decoration still maroon red and elegant in the form of a decorative bouquet .

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Striped Tiger butterfly that *sequesters toxins* from milkweeds

Striped butterfly, Danaus

Among common butterflies, Crows & Tigers are familiar to casual butterfly lovers, I being no exception, one day on visit to Botanical Garden, I found group of Common Tiger Danaus genutia enjoying sunny afternoon on Bauhinia foliage.It is different from plain Tiger Danaus chryssipus in that wings bear dark black stripes which are wanting in plain tiger. Danaid butterfly belonging to Lepidoptera are known to sequester toxins from poisonous milkweeds like Ascelpias currasavica, Calotropis procera to get evasion from predators on account of unpleasant taste and poisons accumulated from poisonous plants in nature. Well known Monarch butterfly of America is Danaus plexipus and exhibits migration in swarm's .Known in Hindi as काली डोरिया चित्रपतंग, तितली, its Dogri name is डलाग फांफड़ी and Kashmiri name is Kanni ponpur. Butterfly plants which it loves to visit are Crotalaria,Barleria, Lantana, Cosmos, Zinnia etc.

Korean Cherry seen in *Dachigam & Seer* Nursery, Kashmir

Korean Cheery, Prunus tomentosa

It was first National Park Dachigam Srinagar and then SFRI Nursery Seer in Anantnag that I saw Korean cherry or Ranking cherry laden with red cherry like edible fruits and ate them with a thrill and joy .Kashmiri name of Korean cherry is Vishkand. Two metre tall with much branching stem clothed with hairy toothed leaves bears white flowers and scarlet red fruits which are eaten by birds and herbivores greedily.I noticed its introduction in the Botanical garden university of Kashmir during later years and motivated Food technology department HoD Prof Farooq Masood to undertake project for value addition to wild Korean cherry and popularise its health drink for visitors and pilgrims at Hazratbal. Fruits are edible & medicinal ,good for kidneys and plant taxa is recommended for ex-Situ conservation in all Floricultural, herbal and Botanical germplasm centres in Kashmir valley.

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Nitrogen fixing *Datisca cannabina*

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Nitrogen fixing Datisca cannabina

I recall Makarkote landslide in Ramban area along national highway and I used to see bushes of False hemp Datisca cannabina colonizing freshly exposed poor soils .Later I came to know it is called Bhangjala or Akalber or Kaudi Karaid and leaflets on alternate pinnate leaves look Cannabis sativa like.It is actinorhizal shrub which develops symbiotic association with actinobacterium of the genus Frankia ,fixes nitrogen and turns poor soils into enriched better quality soils over a longer period. In subsequent wanderings in Kashmir,I found Datisca plants at locations like Khan sahib Budgam on Karewa lands,Kalaroos ,Kupwara,Koragbal Kanzalvan Gurez in Kishanganga valley. Kashmir university Botanical garden has also introduced this dioecious Datisca cannabina sometimes called Datisca nepalensis plant ,flowers male & female grow on separate plants.

Touch me not *Impatiens glandulifera*

Himalyan Balsam, Impatiens glandulifera

Many get confused about Touch me not, it is used for both distantly related plants,for Mimosa pudica called Lajwanti or Chhuimui and for Impatiens balsamina or I glandulifera because if leaves of Mimosa are touched they droop down due to touch sensitivity ,likewise if ripe fruit capsules are touched ,they break open and scatter seeds so Touch me not is used for Lajwanti Mimosa as well as for Gul Mehandi Impatiens. During childhood days ,I used to see Impatiens balsamina flowers in village maize fields during monsoon,girls ,women plucking twigs & leaves ,pound alongwith pomegranate seeds and put on palms as mehandi to stain designs of destiny.It is used as mehandi substitute and is called Teerath in Dogri ,Trul in Kashmiri and Balsam in English. Tourist destinations like Kokernag, Gulmarg gets decorated with taller Himalayan Balsam ,Impatiens glandulifera flowers add charm and glory to water courses and mountain brooks during July August.Pink red blossoming allures tourists,visitors & pilgrims.Asymmetric flowers have swollen pouch on one side and inside mottled with golden brown .Fruit capsules are club shaped ,mature fruits become turgid and if touched with hands get break open to scatter seeds.Seeds of Balsam are nutritive and can be consumed raw as source of instant energy and to quench thirst while traversing mountain trails as told by Ponywala during Machail yatra in 2010. Impatiens is a popular garden ornamental but many species grow in wild and need to be grown in Parks & Gardens by Department of Floriculture.

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Autumn flowering Himalayan Cherry *Padmaka, Prunus cerasoides*

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Pajja, Prunus cerasoides in bloom

I have heard a lot from elders about wild Himalayan cherry Prunus cerasoides syn P puddum called Padmaka in Sanskrit, Pajja & Bataaran in Dogri and Van Rawadi in Pahadi Gojri but first blossoming of this sacred tree I came across at Mussourie hills during IFS probation at IGNFA Dehradun. As Padmaka flowering time is autumn and not usual spring ,it becomes conspicuous during autumn when surrounding landscape is devoid of flowers ,only leaves display autumnal tints.Its bark is present in horizontal rings ,wood is aromatic ,wood decoction is medicinal,seeds are used in necklaces ,its powder administered as uterine tonic and to enhance skin complexion as per ayurvedic system of medicine.Leaves yield a green dye.Padmaka means lotus like ,in Sanskrit its other names are Vimla ,Suprbha ,Charu which all refer to its charming elegance and matchless beauty as seen in autumn. Few years back on next day of Deewali ,I happened to visit Darhal valley alongwith Dr Ashiq Malik and I witnessed mesmerizing flowering on Padmaka trees growing in the riverine habitat.Flowering take place before new foliage and bees visit blooms to get bee forage in times when no flowers are available. I motivated CCF Jammu to multiply it in forest nursery ,get it planted along roadside and cityscape to add colour during autumn alongwith Chorisia speciosa which is autumn flowering but exotic tree and Prunus cerasoides is our native wild decorative tree . During latest visit to Bhoond Mashka ,Pajja trees were noticed preserved at temple site means elders have attached lot of sacred significance to Wild Himalayan cherry since early times and nurtured tree traditions to boost conservations of select trees around sacred locations.

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Critically endangered Blue *Gentiana kurroo*

Blue Gentian, Gentiana kurroo

On way to my maternal uncle's house while traversing Termiyan area on foot way back in seventees, I encountered first ever blue blooming fascinating Himalayan Gentian Gentiana kurroo called in Sanskrit as Trayeman .It was bearing twin flowers, each flower funnel like outer parts deep blue, inner paler blue with dark spots inside.I was told its name as Neelkanth in Dogri by a Shephard. In later years ,I saw Gentiana kurrooa growing at Banjal on way to Joudiyaan mata in Bani and locals named it as Rambaan .It used to grow in abundance till 1980's but populations showed drastic decline and now as per IUCN rating ,it is asessed as critically endangered herb which is called King of bitters ,it is too bitter and named variously in trade market as Karu ,karoo,Kirayat ,Neelkanth ,Trayaman etc. It is used in liver disorders, hepatitis, digestive problems and new research has got leads that it is effective in cancer,diabetes and AIDS as well.Quite decorative medicinal plant which is under cultivation in the Botanical Garden, Kashmir university Hazratbal Kashmir.

Edible Elephant Ear Fig Tree *Ficus auriculata*

Ficus auriculata tree, Trimbal

Fig fruits are familiar to us .Prehistoric man also consumed wild figs. Figs were first trees to be cultivated by man. As figs have nurtured early man, it is held in reverence by many religions. Peepal, Bargad, Phagwara, Goolar, Udumbar are all figs and are known to be pollinated by obligate hymenopteran insects. One of the edible and more delicious fig, I started relishing was Timal or Trinbal popularly called as Roxburgh's Fig or Elephant ear fig botanically identified as Ficus auriculata syn F roxburghii which has large round leaves akin to elephant ear, fruits are oblate syconium with tiny male female florets inside fleshy receptacle turning pink red on maturity. In villages, its leaves are stitched into food plates to serve meals during marriage parties. Insect which pollinates Ficus auriculata is Ceratosolen emarginatus.I am recalling old saying linked to figs -मुंमनु गे उडडरदे न रुंबलू फरोलिये ।

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Laurel leaved Snail Tree *mimicking Cinnamomum*

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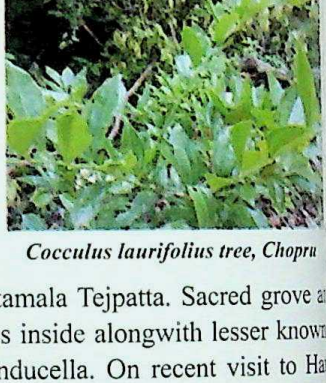

Cocculus laurifolius tree, Chopru

All leaves with 3- nerved venation are not Cinnamomum and if without aroma then it can be a tree from Moonseed family Menispermaceae to which medicinal ice vine Cissampelos pariera belongs. Pseudocinnamon like Cocculus laurifolius has laurel like 3 nerved leaves and many villagers misidentify as Tejpatta.It was at Solki on way to Kalakote that I noticed its treelet there in early nineties, locals named it as Chopru .Leaves are used as adultrant of aromatic Cinnamomum tamala Tejpatta. Sacred grove at Sandrani near Chadai has abundant Cocculus trees inside alongwith lesser known Pavetta indica and armed Lianas Caesalpinia bonducella. On recent visit to Hat Mashka ,on downhill of Bhoond ,many Cocculus trees were noticed which many called Tejpatta without knowing that it is without aroma and laurel like leaves are not true Tejpatta .It is native to Japan and china but found naturalized in shiwaliks.

Insect musician *Cicada, Charera*

Cicada, Musician of Insect world

My forest wanderings especially late summer to autumn have been frequently rewarded by insect melodies, insect musicians singing in chorus on tree trunks, body perfectly camouflaged with tree trunks. I am reminded of Cicadas I noticed in Kandi belt of Jammu called in Dogri as Beenda, I found them singing in oak pine forests in Chenaini Mountains where it is called Chrere, many call them as Ghandaa. On woodland visits in Kashmir, Kashmiris told me Kashmiri name as Dachhponpur but typical name in chaste Kashmiri is Hardrosh as endorsed by Zarief Ahmad Zarief famous poet of Kashmir during 200th Tree Talk interaction at Islamia College Srinagar. Cicadas are hemipetran insects with distinct spike to suck sap of trees and plant roots.Their close relatives though leafhoppers & spittl bugs ,Cicadas are distinct in producing musical notes .As only male cicadas sing ,females do not ,so a poet says- Happy are the cicadas lives They have voiceless wive . Folk lore on cicadas also presume that cicadas are souls of poets who could not creat couplets they wished to write and next birth took place in the form of singing cicada as poets are reciting their poems and lyrics. Himalayan cicada belongs to Genu Platypleura and are familiar to mountain people and visitors of middle hills. What creativity ,I was lucky to photograph insect musician on Willow tree beside river Sin in Ganderbal on way to Kheer Bhawani.

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Scarlet Endemic *Colquhounia coccinea*

Decorative Colquhounia coccinea

What a beauty of aromatic scarlet flowered Colquhounia coccinea with leaves white beneath and borne in opposite pairs as in Rabdosia rugosa. From the Mint family Lamiaceae, scarlet flowers are two lipped and they bloom in an upright spike of exquisite beauty & elegance. I have heard about its occurrence in Uttrakhand but could not see anywhere till October 2015 when I happen to visit hill destination of Nainital. It was in flowering in late monsoon months at the advent of autumn in mountains. Colquhounia coccinea need to be multiplied and planted in herbal cum botanical garden to boost its population in nature.

Flame of the Forest *Butea monosperma*

Flame of the forest, Butea monosperma at Sunjawan

Spring blossoming of Dhak, Palash, Kinshuka, Butea monosperma have been profusely adored & explored right from Yajurveda through Jaidev's Geet Govindam Poetry of Noble laureate Rabindra Nath Tagore .Mesmerizing abundance with which eafless trees get draped in orange red fiery lossoms it looks as if whole forest has been ut on fire ,so name Flame of the forest for this evered wild decorative tree is quite apt. Battle f Plassy fought at a place Plassey has been amed after this tree called Palashi in Bengali. lowers have dark velvety calyx and parrot eak like corolla so named as किंशुका in Sanskrit and Parrot tree n English.Leaves are made of 3 leaflets ,Trinity of Hindu Philosphy seated on three eaflets.State tree of Jharkhand ,flowers are used in the Shiva worship during hivratri in Telangana .Gum called Kamarkas is medicinal and edible .Flowers ave sticky nectar which allure mosquitoes but get entangled and killed in the uid.Wood of Butea is durable under water,so used in wells.Leaves are fed to cattle s fodder. Palanwala near Akhnoor and Palauda near Jammu named after Palash ee called Palaah in Dogri.Flowers are dried and made into Holi ulal.Shantinekatan is famous for Tesu gulal during spring festivity including Holi elebration. At Chuaadi near Jammu ,local clan deity stand established under Butea onosperma tree and is a symbol of spirituality.Flowers are used in treatment of rinary troubles and are now reported to have anti-cancerous properties.

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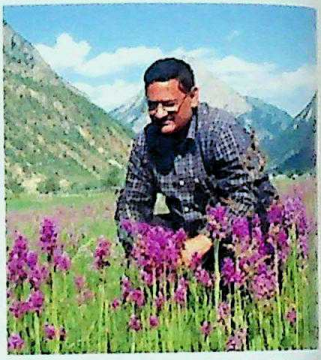
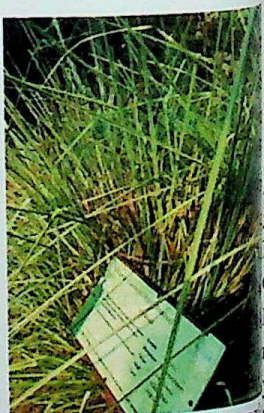
Endangered high value Marsh orchid *Dactylorhiza hatagirea*



Marsh orchid, Dactylorhiza hatagirea at Dawar

I had first intimate encounter with Marsh orchid, Palm orchid called Salampanja in Dogri, Panchaule in Nepali in Suru valley of Kargil in 2006.Deep purple flowers dark spotted lobes aggregated on a dense spikes in marshy banks of river suru where SFRI had established medicinal plant nursery. Botanically identified as Dactylorhiza hatagirea ,its roots are lobed into 3-5 lobes like palmate hand so named Salampanja .In Ladakhi ,plant is named as Angulappa for the same reason.Roots are sweet in taste and traded in market despite ban on its unauthorised extraction.Dry Salampanja roots fetch Rs 10000-15000 per kg so people get allured to uproot it illegaly. Flourishing population of this highly traded endangered orchid is seen at Wanpo near Dawar in Gurez ,grasslands get decorated with Dactylorhiza blooms during ap may ,whole landscape gets coloured in deep purple .Amazing flowers of this orch were photographed in the backdrop of Habba Khatoon mountain in Kishangan valley in Gurez in early summer last year 2016. What an orchid with mesmerizi flowering at Wanpora ,I felt enchanted to the core !

Fragrant Grass *Vetiveria zizanioides*



Vetiver grass, FRLHT Bange

Many fragrant grasses are around but more familiar to us is Cymbopogon citratus called Lemongrass or नींबू घास। Another grass called Meetha ghas Hierochloe odorata is see in temperate mountain areas like Kailash kund Seoj dhar. Lesser known fragrant grass was encountered by me at FRLHT Bangalore ,kind of Bunch grass or Khus khus ghas earlier identified as Vetiveria zizanioides after Tamilian name but modern Taxonomists agreed to shift it to genus Chrysopogon to which Beeran ghas Chrysopogon fulvus belongs . Aromatic Chrysopogon zizanioides is related to Sorghum but it is tufted bunch forming grass with deep root system to penetrate deeper aquifers .Fragrant roots yield Khuskhus syrup which can be offered as sher ,once President Pakistan Prevez Musharraf was served Khus khus sherbat on his v to Delhi during Atal Bihari Vajpayee's times. Grasses prevent soil erosion ,Vetiv helps to check sheet erosion and prevents river banks from flood erosion. Medic grass is useful in Paramahansa Therapy and used in drug formulations.

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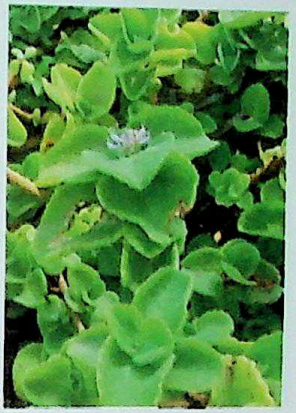
Patta Ajwain *Coleus aromatics*

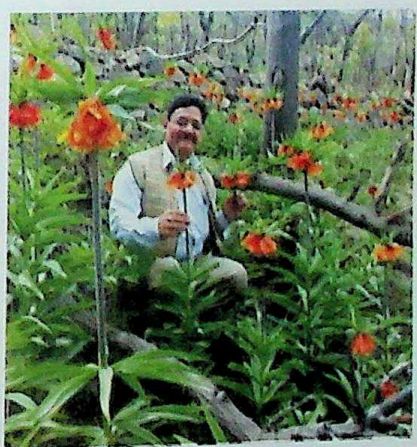
Ajwain I knew in my childhood was Bishop Weed, Trachyspermum ammi from fennel family Apiaceae, green seeds used to be administered raw as treatment for indigestion or flatulence. I am reminded of Dogri riddle -sabz dandi sabz Dana, waqt pawe mangi khana, it referred to Ajwain only. Patta ajwain, Plectranthus amboinicus with thick aromatic leaves and purplish flowers used to be familiar to me in University days as Coleus aromaticus, thick aromatic leaves on chewing smelled and tasted like Ajawain or Oregano. Plectranthus amboinicus is used in meat preparations as spice & condiment .It belongs to mint family Lamiaceae and commonly cultivated in herbal as well as Botanical gardens.



Patta ajivain, Coleus aromaticus

Orange flowering *Imperial Crown Lily, Frittilaria*

It is due to my intimate wanderings to all nook & corners of forests & wilderness areas that I call my self as Van Vidyarthi means student of forest or nature. I had encounter with few flowered Fritillaria roylei locally called Sheethkar in Kashmiri & Kakoli in Hindi which is a reputed medicinal mountain herb from onion family. Flowers are pendulous and yellowish green hanging bells like and seen growing during monsoon months at locations like Sheshnag, Panchtarni, Gurez, Gangbal, Seoj, Bhaderwah etc.



Imperial Crown Lily, Frittilaria imperialis

More elegant and charming Fritillaria I cam across near Jawahar Tunnel on mountain slopes during spring months of March ,April .May is fascinating orange yellow Imperial Crown Lily botanically called Fritillaria imperialis .On way to Srinagar during annual durbar move ,I regularly romanced with floral splendour of this Fritillaria along Pir Panjal mountain slopes from upper Munda to lower Munda moments of joy nicely captured by my driver Altaf.

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Great Bell flower *Campanula latifolia*

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Bold flower, Campanula latifol

Small bell flower Campanula colorata or Campanula pallida grow commonly in farmlands around shivaliks .Garden bell flowers namely Canterbury bells do add charm to Mughal Gardens in Kashmir. Visit to Gulmarg in mid nineties allured me to beautiful flowers of Campanula locally called Branz. Gurez area is rich repository of wild ornamental flowers and Campanula latifolia is more prominent among the assemblage dominated by Impatiens, Prangos, Ferulas, Senecios ,Aconitums, Pleuropteropyrum ,Delphinium and Vicias. Great bell flower grows luxuriantly in Padder area; track leading to Machail temple from Masu onwards is full of fascinating flowers including bell flowers and golden whorl flowers. Campanula cashmeria grows abundantly over rocky mountain slopes all along Tragbal to Rajdhani and places around Dhara Dachigam but exquisite beauty of Campanula latifolia simply awesome and fascinates visitors.

Grand *Viburnum* that blooms in snow

Viburnum grandflorum, Guchh, Teldi

Viburnum grandiflorum locally called Teldi, Tiyond in Dogri, Kulmansh in Kashmiri,Guchh in Gojri ,Timoi in Hindi and Sheep berry in English is common shrub of conifer forests ,its grand fragrant flowering fills Snowscape with charm & elegance unmatched by any other plant in early spring. Honey bees get allured to fragrant flowers and collect pollen nectar for quality honey when other blooms are yet to appear in the surroundings.Opposite leaved shrub bears pink flowers in dense corymbs.Ripe fruits turn red to black and are eaten by bears as w as mountain people under the name Kiflu or Teldu. Viburnum opulus ca Snowball or Guelder rose is cultivated in Kashmir gardens ,it is national pride symbol of Ukraine and called Kalyana .Snow white flower balls of Viburn opulus may look grand but maddening fragrance of Viburnum grandiflorum more enchanting to me ,more over bees use fragrant flowers to yield honey.

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Blue Poppy *Meconopsis aculeata* that has no opium

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Meconopsis aculeata, Gul-e-Neelam

First Poppy I saw in life was Papaver somniferum source of opium with nodding flower bud and glaucous stem.Later I recall Papaver rhoeas seen in school flower beds ,same was given to me during 12th class Taxonomic practical examination at Udhampur. What enchanted most was Himalayan Blue Poppy in the rocky mountain slopes of Margan,Synthan and Rajdhani Pass.Four petaled blue blossoms with mist droplets on petals enchanted me a lot.Meconopsis aculeata and Meconopsis latifolia are two wild blue poppies adored by me.Meconopsis latifolia was seen at Zajinad near Trunkhal on way to alpine lake Gangbal at Harmukh across Wangat Sonamarg in Kashmir.Meconopsis grandis is National flower of Bhutan . Exquisite beauty of Blue Poppy bloom is engraved deeply on the canvas of my mind .Alas high altitude road construction is leading to habitat fragmentation and modification and populations are showing sharp decline in wilderness.

Michelia that is no more *Michelia*

Magnolia champaca flower

I was familiar more with Michelia planted in temples than Magnolia planted in Mughal gardens in early days of understanding Taxonomy .Now Michelia champaca is no more Michelia and stands renamed as Magnolia champaca locally called Champa .Its sweet scented flowers allured me ,it soothed my nerves and provided eternal bliss whenever I smelled its yellow flowers.Magnolia grandiflora blooms enchanted me during the summer visits of Kashmir .Honeybees evolved later to Magnolia blooms and therefore bees seldom sit on Magnolia blossoms I discussed during my Tree Talk sessions held in Kashmir. Amber Srivastava however introduced me to entirely a different Michelia figo now no more Michelia but Magnolia figo ,cream blossoms emitting ripe banana like sweet fragrance.Photo taken by me during green interaction with Amber reminds me of the unique banana shrub and the fact that Paradoxurus montanus found in Sri Lanka has pleasant scent akin to Magnolia champaca flowers.

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Red flowering *Tamarix* of arid sandy tracts

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Tamarix in flowering at Leh

Alas, all riverine sandy tracts used to be habitat for red flowering leafless Tamarix aphylla in Kandi belt of Jammu in eightees, all vanished as tracts were encroached upon, altered, modified by man. Tamarix called as Suha Jhau is quite ornamental when laden with gregarious flowers, bees enjoy floral feast to yield honey for humans to cure ailments.In absence of blooms, Tamarix look like Casurina equisetifolia. On visit to Ladakh in later years ,I saw Tamarix gallica & Tamarix ramosissima in arid tracts of cold desert.In 2014,while returning back from Hemis Monastery Mask festival during Kal chakra ,I got fascinated by purplish pink flowering of Tamarix ,I could not help to embrace the beauty that evening,I had full roma amid humbled twigs. Forgetting Tamarix means forgetting riverine gully eros and paying the price by way of devastating floods.Encroached riverine banks n to be vacated in the interest of ecology and home coming of Red flowering Tam which being fire resistant can act as barrier against marching forest fires.Tam plants are adapted well to salt alkaline sandy tracts and alongwith Sacchar growth prevents soil erosion.

Edible *Grewia asiatica, Phalsa*

Grewia asiatica in flowering,

Grewia optiva named by Carl Linneus after leading plant anatomist Nehemiah Grew was more familiar to me during childhood days ,my relatives used to burn its wood in village hearths ,feed leaves as winter fodder ,twigs immersed in puddles for retting to get fibre for ropes to tether cattle ,dried defibred twigs used as Torchwood during night travels under the name Kanooni.Grewia sapida called Phrei grows in forestlands and Grewia optiva on farmlands as multipurpose agroforestry tree.Edibility was poor but still I used to eat 4-lobed black fruits of this tree locally called Dhamman as originated from sanskrit word Dhanvana . Later in life I came to know that most edible Grewia is not Dhamman but Phalsa identified botanically as Grewia asiatica .Its juice stand innovated and sold in tetrap under the name of Phalsa juice.Flowers are golden yellow and leaves multine broader and rough to touch.

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Anti-obesity *Caralluma tuberculata*

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Caralluma tuberculata, Kareenjli

Caralluma tuberculata is the botanical identity of the Apocynaceae succulent plant, I cam to know only in late nineties ,till then whenever I visited Magotra Printing Press Gali khiloneyaan ,I used to be enquired about forgotten wild vegetable called Kareenjali in Dogri.It grows under Carissa opaca bushes with miniature Euphorbia royleana like plant having bitter taste but with useful health benifits.I got its specimens much later from Sunderbani Nowshera area and later got clue that grows in arid tracts of Doda as well. Magotra brothers told me that once it used to be sold in sabz mandi but it is not seen in the Jammu market any more. Indian Institute of Integrative Medicine started research on the curious succulent ,Dr Y S Bedi disclosed that it is used as anti-obesity plant .Jaisalmer plant taxa is Caralluma edulis. On visit to FRLHT Bangalore ,I saw another south Indian species called Caralluma umbellata. Arid area plant is adapted to drought hit areas like Kandi area of Jammu, it need to be included in ex-Situ conservation units like herbal gardens .

Vanishing Danti, *Baliospermum montanum*

Baliospermum montanum, Danti

First encounter with Danti also called हस्तिदंती in Sanskrit took place at Gajansooh Marh area of Jammu .Later years I could see Danti Baliospermum montanum at Katra and Tikri .Latest visits to Mansar, Katra, and Gajansoo reflected that populations are on the decline. Reputed medicinal bush ,Baliospermum also called as Red Physic nut belongs to family Euphorbiaceae and subfamily Crotonoideae ,it is used in preparation of Dantiarishta ,roots are useful in piles and constipation.Danti shrub need to be included in College herbal gardens which Education department has recently resolved to establish in the state.Lesser known medicinal plants if included in city gardens and herbal gardens can help in further multiplication and ex-Situ conservation of declining taxa.

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Endemic edible *Decalepis hamiltonii* included in IUCN Red data book

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Endemic Decalepis hamiltonii in flower

Yellow wooded endemic endangered climber I happen to see at FRLHT is a lesser known liana, underground tuberous roots are edible, pickled and used to have sherbat as health drink.It has antidiabetic qualities and a promising neutraceutical with antioxidative stress reducing action.It is infact south Indian equivalent of Berberis though it belongs to Ascelpiadaceae now transferred to Apocynaceae and is named as Swallow wort .It has medicinal qualities akin to Hemidesmus indicus. Due to large scale uprooting for edible purposes, its population has shown drastic decline in previous years and is now endangered plant included in IUCN Red list. For its conservation ,Medicinal plant conservation areas stand demarcated in Karnataka .Ex-Situ conservation being carried out in FRLHT herbal garden ,I was told by D K Ved IFS presently working with FRLHT Bangalore.

Cliff Banana, *Ensete superbum*

Ensete superbum, Cliff banana

Banana fruits are familiar to us as seedless fruits rich in potassium borne on the largest herb Musa paradisiaca which flowers fruits once, further propagated by suckers. Wild banana called Cliff banana or Rock banana from Western Ghats grows on limestone rich cliffs however is different as leaf bases are persistent and remain hugged at the base, fruits have seeds and botanically named as Ensete superbum. While on a visit to Foundation for revitalization of local health traditions Bangalore, I happen to photograph it for nature loving tree talk enthusiasts, infact it was during one of FRLHT talk session that I saw this endemic banana introduced in the herbal garden.

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Colourful *Dragonflies & Damselflies*

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Dragonfly

I was not aware about the word Oding ie watching dragonflies & damselflies belonging to insect order Odonata in my childhood days but I was watching both near hill brooks, forest uddles and village ponds. Symbol of strength, happiness, Dragonflies are mentioned in Japanese folklore .Dogri word Teenba has much in common with Japanese Tomba for the youngman .Infact island nation of Japan resembles a dragonfly in outline. Young nymphs live in water for years, adult fly during monsoon rain, devour away mosquitoes and other invertebrates. Oldest fossil dates back to 320 million years Cretaceous era, they existed with dinosaurs too. Dragonflies have unequal two pair wings held flat sideways in the sitting posture but damselflies hold wings folded on the back.Dragonflies belong to infraorder Anisoptera but selender bodied damselflies belong to Zygoptera. Dragonflies are more active fliers but not the damsel flies, eyes have thousands of ommatidia and wings are transparent or with iridescent colours .Many birds like Indian Roller, Drongos eat away dragonflies. Dragonflies are called Kat jeen jeen in Kashmiri and Helicopter in Pahadi.As kid I used to put thread knots around tip of abdomen and fly them in air with the long thread extension in hand .Oding plus making them dance on my tunes.

Jacob's ladder *Polemonium coeruleum*

False valerian, Polemonium in flowering

What elegance in shady forest Glades beside marshlands, woodlands, blue bliss of blue saucer like blooms amidst green foliage gracefully pinnately cut! Flowers blooms in early summer in the fir forests, bees love to visit again & again to have fabulous feast of pollen & nectar.Not related to true Valeriana,it is called Greek Valerian or False Valerian and is suitable wild ornamental perennial for shady borders in our parks & gardens.European gardens grow this plant to add colour to landscape and provide bee forage to honeybees around apple blossoms. Polemonium caeruleum as plant is identified botanically; it belongs not to Valerianceae but to Polemoniaceae to which Phlox drumondii belongs to. Let us add such annuals, perennials at ecotourist resorts and adore native blossoms rather than exotic ones.

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Edible Medicinal Barberry, *Berberis lycium*

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Fruits of Blue Barberry, Berberis lycium

I relished blue berries called Kainblu in my childhood while enjoying monsoon visits to maternal granny's house.Blue berries used to dye my lips black purple ,even fingers used to get stained in its fruit colour.Armed with trilobed long spines ,I used to collect berries without spine pricks as fruit laden branches used to come out of spiny net.Tender twigs and leaves were used to get Barberry sauce but I never attempted Barberry drink which now I feel, can be innovated with health benefits for liver & blood. In mountainous forest fringe villages, I used to see uprooting of medicinal Berberis lycium for preparation of jet black thick concentrate called Rasaunt in mid seventees. In Kashmiri called as Kaodachh Sanskrit scholars named it Daruharidra and in Hindi as Daruhaldi or Kachhmal. Spring blossoms in golden yellow present grand spectale, fruits get matured by July August .Berberis bushes are semi-evergreen and remain green most of the year.Two endemic Barberries reported from Kashmir are Berberis kashmeriana and Berberis huegliana which find mention in IUCN Red Data book as threatened .Berberis lycium used to grow in plenty but due to widespread road construction in hills, drastic population decline has been noticed by conservationists in Jammu & Kashmir. Blue Barberry is found in Jammu but Red Barberry Berberis pachycantha grows in Kashmir in addition to several other species.

Vanishing Golden Gajarmoola *Eremostachys superba*

Gajarmoola, Eremostachys superba

Lesser known wild ornamental perennial seen growing at few locations in Jammu hills is Eremostachys superba with superb golden spikes flowering in each spring, underground parts swollen like gajar & mooli hence named by natives as Gajarmoola or Gajarmooli. First report of its vanishing status appeared in national media about twenty years back when it was highlighted that only small population of its individuals exist around Mohand in Dehradun. Subsequent reports of its occurrence by Dr Sushil Verma in mid nineties reflected that it is also found growing outside Dehradun and extensive field surveys are lacking to corroborate the facts. I spotted its individuals at Channi prat near Sunderbani in late 90's but large population of morethan 130 individuals came to my notice 4 years back when while coming back from my native home at Ramnagar ,I saw its flowering on leftside in the cultivated farmland at village Jallow. Golden Sage of exquisite beauty need to be introduced in all parks & gardens maintained by department of Floriculture and Forest.

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Toothache Tree Tinbru *Zanthoxylum armatum*

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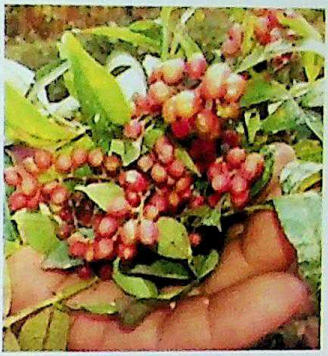

Mature fruits of Tinbru, Zanthoxylum armatum

Tinbru tree wood pestle used to be permanent item in my village kitchen as I was told to pound dry pomegranate seeds in a stony mortar usually brought from Pantha chowk srinagar. Yellow coloured pestle outwardly studded with fatty spines provided decor to the kitchenspace .Quite often, I used to pound pomegranate chutney for the family especially on Sundays. Locally called Tinbru ,I used to get its toothsticks fresh to clean my teeth till 12th standard ,thereafter I switched over to Phulai datun till graduation ,ultimately I got addicted to synthetic toothbrushes and forgot Tinbru as well as Phulai. Zanthoxylum armatum as it is Botanically known is aromatic small sized tree or a large bush with orange red fruits on maturity which serve as spice or condiment to flavour khameeras in dogarland .Its Hindi name Timar or Tomar and finds use in various toothpastes like Lal Dawar .In Pithauragarh, its seeds are used as spice and also brewed to get liquor. Tinbru is a useful tree and need to be popularised as agroforestry tree in dry valleys like Chenab valley, Darhal valley, Bani valley. Dogri folk song -Chutney Tinbru di is familiar to youngesters but large scale plantations need to be raised and harvested for economic benifits like decorative art craft items ,bangle stands,keyrings in addition to value added gorgles ,mouth freshners etc.

Beautyberry, what a Pearl beauty, *Callicarpa macrophylla*

Pearl beauty, Callicarpa macrophylla, Suhala

Callicarpa macrophylla, a hill shrub with maroon floral clusters and pearly white edible fruits looked to me as elder sister of more common Colebrookia oppositifolia.Even Dogri names sounded similar, Callicarpa called Suhala and Colebrookia called Suhali.Both are folk medicinal bushes, leaves used to heal inflammations and swellings and to get relief in rheumatism. Calli means beautiful or beauty and Carpa means fruit so genus Callicarpa refers to beauty of its pearl like fruits .In my school days while traversing woodland pathways, I used to taste its few fruits .Its Hindi name is Daia or Dahiya which refers to its white curd filled bowl like fruits.In Sanskrit ,its name प्रियंगु again refers to its mesmerizing beauty which one adores and gets allure to. It is a large sized shrub with leaves borne in opposite pairs and purplish pink flowers borne in axils. During a recent visit to Bala sundri temple at Billawar, I got Beautyberry photographed for mature lovers.

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Musk deer that yields musk *Moschus cupreus*

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Musk deer, Moschus cupreus, Kasturi Mrig

During IFS probationary days, I happened to visit Kufri to understand basics of Musk deer captive breeding ,conservation efforts and extraction of musk .That was Alpine musk deer Moschus chrysogaster ,endangered mammal which lives in alpine subalpine mountains and eats leaves, fruits, bark, mosses & lichens. It has no antlers ,no facial glands ,instead it has a gall bladder and abdominal musk gland ,pair of upper canines get abnormally lengthened to look tusk like in appearance. After landing in Kashmir ,I visited Pahalgam mini zoo to see another threatened Kashmir Musk Deer Moschus cupreus .Kashmir musk deer is fond of eating leaves and fruits of Himalayan aromatic shrub called Skimmia laureola ,infact it is hypothesized that leaves of Skimmia get metabolized in the body of Musk deer to produce musk of commerce ,musk deer is hunted indiscriminately to get precious musk which is traded in the world market.For this reason ,hunting & poaching has reduced its populations below the precarious limits and animal is now assessed as Critically endangered deer. Kashmir musk deer is called Rus in Kashmiri ,Raunsa in Dogri whereas Skimmia laureola is called Nera or Ruspatta ,Ruspatari or Dhoof Sangli .Both Musk deer and Skimmia are interdependant in the natural trophic relationship. During severe winter, Musk deer survives by eating available mosses and saxicolous lichens.

Red Muntjac with 6/7 *chromosomes*

Barking Deer, Muntiacus muntjac

During childhood days, I used to wait for Lohri celebrations, especially the evening bonfire and Haran (Deer) dance during the mid-night. I used to go regularly to Ramleela wherein Mareech in the disguise of golden deer allured Sita ji and became reason for Sita's abduction. One of the lesser known deer is Kakkar ,Bhaunkan Mrig zoologically named as Muntiacus muntjac, Red Barking deer or Red Muntjac .Unique deer with unbranched antlers in male ,prominent pair of canines protruding out.Female deer is known to have lowest diploid number of chromosomes as 6 ,male have 7 .During stress time ,deer produces dog bark like sound so named as Barking deer ,Kakkar is its Dogri name. Deer is known to browse on bushes and graze on grasses but it consumes bird eggs and eat away small animals as well. Manda deer zoo can be visited to have sighting of a mammal with lowest chromosome in the mammalian group. Our development needs must also include ecological sensitivities of such curious animals as they play indispensable role in the environment, development at the cost of habitat destruction may cost us beyond our estimation.

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Golden Bloom *Reinwardtia indica*

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Yellow Flax, Reinwood Indica, Basant

Golden blooms of Reinwardtia indica called popularly as Winter Flax in English,Piyoli in Garhwali and Basant in Dogri is my most sought after spring flower which I adore and nurture my thoughts . It symbolises advent of blooming season and adds charm and grandeur to wilderness .Lot of folklore too linked to this pretty bloom of eearly spring.Garhwali folklore has a tale to tell ,there lived pretty girl Piyoli in wilderness,she grew amid forest blooms and creatures and got naturalized in natural setting.Once Piyoli met handsome Prince who allure her and persuaded her to accompany him to the palatial king's palace.Piyoli came to palace but she felt lonely in palace in absence of forest friends.As per her wish ,she wished to be buried in jungle after her death ,faithful prince did the same.Where Piyoli got buried,grew pretty Reinwardtia flower of matchless golden hue ,now called Piyoli or Basant. As story writer I wrote a story on this pretty bloom titled Phull Basante da which was broadcasted on Radio Jammu and got included in the book -Jaram Roj. Five petaled flowers with free golden petals surrounding five stamens and three carpels.Trigyny nature earned it earlier binomial name as Reinwardtia trigyna and placed in Flax family Linaceae.

Alpine Crop relative, *Cicer microphyllum*

Wild Crop relative Cicer microphyllumm flowering

Cicer arietinum called Black Gram or Kala chana is common household pulse cultivated by farmers and traded in the market.Are you aware that more fascinating wild herb with dark blue butterfly shaped flowers and matching edibility is found growing in cold desert mountain slopes in Kargil & Leh districts of Ladakh highlands above 12000 ft elevation. I saw alpine legume Cicer microphyllum wild relative of cultivated Black Gram for the first time at Lalung in Kargil in 2006 and later in 2014 at Changthang near Changla on way to Pangong in Ladakh . What a genetic makeup of an alpine herb ,it is able to tolerate -30' freezing cold of Ladakh and is useful for evolving more adaptable climate resilient future gram varieties in the backdrop of erratic weather patterns happening as a result of climate change.

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Spring *Tulip stellata*

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Tulips stellata in flowering

As teenager, I used to wander in wheatfields in search of blushing tulips with rosy pink cheeks .Just after vasant Panchmi, blooming tulips presented mirthful spectale around wheatlands, farmlands and woodlands.Quite often I used to dug out bulbs and eat them on way to village school Dihadi, Ramnagar . I grew among tulip blossoms and nurtured flower beauty in my thoughts and emotions so immensely that once on a Holi day at Mansar rest house, I got tulips collected for playing Holi. Tulips called Keyaloo in Ramnagar, Magge in Sunderbani are named Bhoonde in Bhaderwah.Dutch paintings and Mughal paintings devoted more space to the seasonal bulbous tulip blooms .While roaming in & around Shankracharya hill, I felt fascinated by dark centred Kashmir tulips where tulips are named by elders as Gul e lala . I got soaked in mesmerizing beauty of Tulip garden at Shirazbag Chashmashahi with morethan 60 varieties white, pink, red, yellow, purple, maroon but wild tulip blooms in the springscape of Shivaliks always remained an unforgettable thrill. During first ever Forest Flower Festival at University of Jammu ,I got Palanquin decorated with Rhodo & Tulip blooms to connect to my childhood impressions. At occasions while passing through tulip filled landscape around Jammu,I spared time to bloom a while with blooming Tulipa stellata ,tepals six arranged in two whorls ,outer whorl of 3 akin to sepals and inner whorl of 3 akin to petals but both alike and similar so named tepals ,my Botany teacher used to teach while detailing floral diagram of family Liliaceae. Today on wayback journey from Basohli, I got a glimpse of blooming blushing tulips yet to bloom in abundance, I got lost in the creation of God, what a panorama of spring blooms all around!

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Two Primulas I encountered on *Margan Mountains*

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Primula reptans

Two Primulas, I happen to come across alpine mountain meadows of Margan in south Kashmir during the fasting month of Ramzan enchanted me the most. Reid's Primula never seen before was blooming beside a scree slope, its flowers nodding a little, corolla creamish white, leaf margins white haired, it was growing amidst rocky cut surface, I felt lucky to have seen such a lovely primrose Primulas reidii on such a lovely morning of holy month of Ramadan. Next little Primula was growing on the flat moist meadow beside alpine lake amidst wandering mists and little drizzle.Deeply notched corolla lobes coloured maroon pink ,tiny leaves crumpled at the base .It was creeping Primrose Primula reptans never seen in life. Primroses are alpine flowers of exquisite beauty,leaves basal with bunch of blooms at the top of floral peduncle .Mostly grow beside glacial moraines ,alpine meadows or mountain scree slopes .In Hindi Primula is called पीत सेवती । Trikuta hills around Shri Vaishno Mata shrine display Golden Primrose Primula floribunda to add charm to the spiritual bliss but two Primulas I saw on way to Choharnag cluster of four fascinating lakes above Margan Pass added unforgettable bliss in me.That day ,my muslim friends Baba Methesir and Tahir Gazanfar ,Manzoor Javaid accompanied me despite Ramzan fasting and made my mountain trip Primula day of my life.

Primula reidii

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Pashmina Goat, Capra

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Pashmina Goat painting (Courtesy - Babar Afzal)

Rearing sheep & goat is age old activity .Ladakh is home of wild goat and sheep and known for the domestication of Pashmina goat in the Changthang region. It was Badshah Zain ul Abdin who patronized art & craft industry in Kashmir who brought weavers from central asia to boost shawl weaving in Kashmir .Likewise Mir Hamdani also contributed to Pashmina shawl weaving by inviting skilled weavers from Persia. Pashmina wool obtained from high altitude Pashmina goat Capra aegagrus hircus is fleece of the animal, its diameter is 12-15 micron whereas wool is thicker & coarser. Changpas ethnic community of Changthang are associated with domestication of rare goat in the Ladakhi highlands.It was March, 2012 when first Pashmina goat Noori was successfully cloned by SKUAST scientists in J&K. Babar Afzal a promising artist & painter has done remarkable work on Pashmina goats ,he has not only portrayed rare goat through paintings of highest order but tried to focus the need of preservation of Pashmina weaving as an art and industry to sustain livelihoods in the fragile ecosystem of Ladakh .He divulged that idea to paint Pashmina goats and Changpas nomadism took firm roots in his mind only after he heard the sad news that over 25000 Pashmina goats got perished in heavy snow in Changthang in a disaster of unimaginable dimensions putting question mark on our capacity to deal with fragility of mountain ecosystem in the background of climate change .Are we prepared to meet challenges of environment & ecology which Changpas did remarkably so perfectly over the centuaries .We need to understand the need of blending traditional ecofriendly resilient approaches with modern scientific innovations.

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Tonkin Jasmine Guaalmanda *Telosma pallida*

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Edible flowers of Telosma pallida, T. cordata

Monsoon melodies with monsoon flowers enchanted me during school days.On way to village school; I used to collect edible flowers of Tonkin Jasmine Telosma pallida /T cordata locally called as Guaalmanda means manda of the Shephard. Belonging to the Aak family Ascelpiadaceae, its creepers along village brushwood fences used to fascinate me as a teenager.I tasted its vegetable frequently while dwelling at rural hamlet Daraadan near Ramnagar. After I joined GGMScience College for higher studies, I encountered Telosma flowers being sold at sabz mandi Jammu as delecious monsoon vegetable.Over the years, local collection of edible guaalmanda seems to have declined and I could not see under sale anywhere in City of temples. Pakalana vine or Cowlip vine as it called in English, its flowers are fragrant during night hours especially in case of Cordate leaved Telosma .Telosma pallida which grows in Shivaliks is less fragrant in comparison, and oppositely borne leaves are cordate in Telosma cordata but less cordate in T pallida. Forest officer Sanjay Gupta on field visit to Jasrota in Kathua disclosed that he is fond of relishing Gualmanda flower vegetable and has put plant under cultivation at home .Telosma flowers can be made into useful herbal soup as is done in Thailand restaurants .Guaalmanda parantha can also be innovated under forest food feast at ecotourism destinations.

Kashmir Mallow, Lavatera cashmeriana

Lavatera cashmeriana in flowering

Kashmir is paradise for fascinating flowers , one flower unique to floralscape of Kashmir is Kashmir Mallow named Botanically as Lavatera cashmeriana from the Lady finger family Malvaceae. I saw Lavetra blooms under cultivation in IIIM campus Sanat nagar ,Kashmir university Hazratbal and Botanicàl garden Chashmashahi but in wilderness ,I encountered it at Naranàg iñ wangat valley and Tulail area of Gurez in such an abundance that I was spell bound to see its light pink elegance, each petal notched gracefully. Kashmir mallow in wilderness was later seen by me in July 2010 on wày to Machail in Paddar area of Kishtwar.Only Padder area can match with floral beauty of Gurez in Kashmir. Sazposh as Lavatera cashmeriana is called in Kashmiri is endemic to our area seen commonly growing in lower Dachigam where I saw it blooming much earlier in ninetees while compiling a book - Wild & cultivated plants of Jammu , Kashmir & Ladakh published by Directoratè of social forestry in 1997. I had latest encounter with it in natural landscape of Kajinag National Park in Baramulla in 2015.

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Mountain Candle, *Eremurus himalicus*

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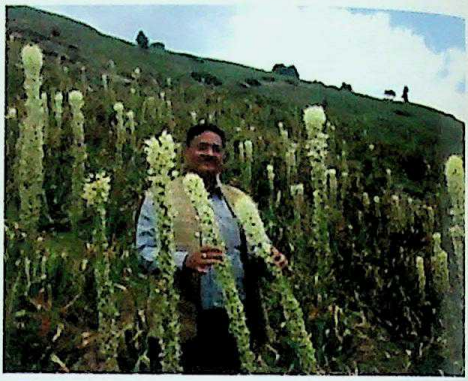

Foxtail Lily, Eremurus himalicus, Kahloo, Bulkat

Mountain bloom which attracted me most in the high altitude meadows whenever I visited is Eremurus himailicus .It was in 2005 when on a visit to Paddar area, I saw it growing on steep rocky slopes, it has already flowered, I was told it is delecious vegetable under the name Kaahloo, mature leaves not fit for consumption but octopus tentacle like fleshy roots can be cooked as vegetable .That night my supper was served with its root vegetable. Eremurus himailicus called Foxtail Lily or Mountain candle is delecious wild vegetable, young leaves consumed in spring under various local names .It is called Prezdar in Kokernag Duksum area, Wull or Wullun in Pahalgam Aru area. On visit to Gurez area in Bandipore district of Kashmir in 2007,I found it growing luxuriantly at Zatkusi below Rajdhaan pass at morethan 11000 ft .At Dahi nala ,I got its other local names as Chhilhak in Gojri and Bulkat in Shina. Foxtail lily is decorative plant used in parks & gardens for its elegance and beautiful dense flowered spikes. Its Cleopatra variety is Orange Foxtail Lily.Eremurus robustus is grown in Kashmir gardens.

Blue Whistling thrush, *Myiophonus caeruleus*

Thrushes are birds with sulking habits and are insectivores / detrivores, noisy birds of mountains. First encounter with fascinating blue whistling thrush Myiophonus caeruleus locally called Bhat bhatol in Dogri was in early eightees when I saw it in the Botanical garden campus on a cloudy chilly evening around Lohri .Prof D N Sahi told me its migration to Jammu city during chilly days otherwise it is resident of temperate woods and riverine gorges .Whistling like a school boy ,it is fascinating attraction at various tourist bungalows where it is attracted towards left over meals .Dark blue colouration is artistically studded with white spots with a golden beak and golden paws ,it screeches and whistles with varied melodious notes pleasing to tympanum . In Bhaderwah area where it is named as Gad kol ,Neeru nala is its favoured habitat under elders over rocky boulders.In Kashmir it is called Kava kanoor or Hazar dastaan , it mimicks several voices and whistles like humans .Though resembling mountain Jungle crow like sùpergically but yellow beak and legs distinguish it from black beaked and black legged crows. Also named as Kaljeet in Hindi, it is riverine bird with prefrence for deep gorges along mountainside brooks and streams where it preys upon crustaceans, insect larvae and water snails for its meals.

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Elegant Tree *Rose Rhododendron arboreum*

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Rhododendrom arboreum flowers, बुरांस

My remembrances goes back to my Granny'house perched beside Oak Rhodo forest where during april may grand red blossoms borne in exquisite trusses enchanted me while traversing Rhodo rich forest slope . My granny uttered its Dogri name Cheu ,I remained soaked in its majestic elegance thereafter so to so that while in Gandhi Memorial science college ,my father used to carry its blossoms all the way upto city of temples. National flower of Nepal called Lal Gurans in Nepalese is state flower of Uttrakhand as well as Nagaland, its Hindi name is Burans but called Hadhdull in Poonch Rajouri whereas it is called Madhaal around Trikuta hills, abode of Goddess Shri Mata Vaishno Devi ji. While on a pilgrimage to Sukrala devi,I was told a mythical story about Rama who once happened to walk beside this tree laden with red blooms.As per folk tale ,flowering tree did not reply about lost Sita ji and was cursed by Rama to loose both its beauty and fragrance.Realizing its blunder ,it repented but Rama being benevolent restored beauty back but kept it without fragrance to remind it of its arrogance. Dera ki Gali with charming Red Rhododendrons is no match to Rhododendron sanctuaries of Sikkim where dozen of species provide colourful panorama to springscape .Eecotourism huts made at DKG never attempted Rhododendron festival which I advocated to then Head of forest force Shri J Kishwan who nominated me to attend International Rhododendron conference at Gangtok in Sikkim in April 2010.Arunachal Pradesh has rich diversity of Himalayan Rhododendrons but J&K has just four species in comparison. During MCT course, I happened to visit beautiful Vancouver in British Columbia where Rhodo flowers

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added colour and charm to city parks and gardens.I am reminded of Ooty Kodaikanal Gandhi Memorial College of Education Bantalab, Jammu. Rhododendron arboreum Var. nilagiricum grows naturally in shola forests. Cheu forest bungalow at location Chew in Billawar forest division was nestled amid Rhodo trees where I spent one night during monsoon time way back in 1989. Rhododendron arboreum need to be preserved and raised in forest nurseries as is being done in distant Sikkim .Many Rhododendron trees have been felled for PMGSY road building under FCA but not a single sapling of vulnerable wild ornamental tree was ever replanted anywhere in J&K. Flower of Rhododendron gor expression in my award winning book on wilderness travelogues titled Trip Trip Chete got translated by Sahitya Akademi under the name Boond boond Smrityaan ably translated by Sanskrit & Hindi scholar Dr S P Srivats. During series of Tree Talks, garhwali song on Rhodo has been repeatedly presented by Bhaderwahi boy Sunit Singh who was introduced to me by Ambar Srivastava who himself is a great nature lover. I am recalling fascinating forest flower Festival organized during march 2016 when fresh flowers of Burans / Chew were not only displayed for visitors but were brewed into a wine red floral decoction called बुरांस चाय, worthy VC University of Jammu Shri R D Sharma tasted Burans tea and appreciated the innovation.

Endemic perennial, Willow leaved *Artemisia*

Artemisia a known ancient medicinal aromatic herb was named after a plant lover queen Artemisa wife of King Mausolus. Seski seen as silvery white growth on rocky mòuntain slopes of Kishtwar is named as Zoon after Zooni popular 16th centuary poetess Habba Khatoon in Kashmir.It is familiar Artemisia maritima .Many other Artemisia species like Artemisia absinthium ,A wallichiana,A tournefortiana ,A dolichophylla are seen in high mountains but one endemic Artemisia from Kashmir is Willow leaved Artemisia amygdàlina with Salix like undivided leaves and called Veeri Tethven by Kashmiris along LoC. I saw it at Dab nala on way to Gurez in 2007 May followed by at Kalaroos, Z-gali on way to Machhìl in Kupwara and at Kajinag in Limber area which was once visited by Hooker and Duthie too. Highly aromatic herb is antihelminthic in action as is more familiar Seski or zoon, both are found in Gurez Tulail sector in Kashmir.

Artemisia amygdalima plant

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Edible milkwort *Codonopsis*

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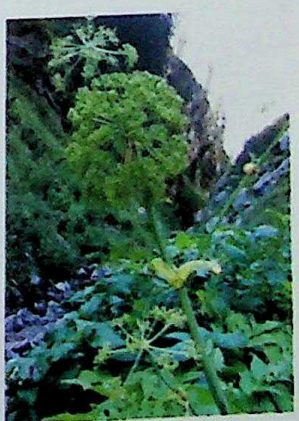
Milkwort, Codonopsis flower

First encounter with any milkwort was in 2006 when on a tour to Sankoo in Kargil, I saw its elegant bell like blooms, stems witn an odour and yellowish milk .It was Codonopsis clematidea . Next encounter with Codonopsis rotundifolia was at Dawàr in Gurez followed by Machhil in Kupwara and Machail in Kishtwar. At village Machhil in Kashmir and village Masu in Paddar, I interacted with rural folk who consumed its shoots as mountain vegetable .At Sumcham near Machail short of Zanskar; Codonopsis ovata grows luxuriantly alongwith trailing creeper Codonopsis rotundifolia. Codonopsis rotundifolia grows abundantly in Gurez, Machhil, Kajinag in Kashmir and Paddar in Kishtwar whère it is consumed as pòt herb.Milk exuding Milkwort is aromatic, medicinal cum wild vegetable with swollen radish like ròots having aphrodisiac qualities. It need to be çultivated in herbal gardens of Kashmir and Kishtwar.

Umbellifer with latex in stems



Angelica himalaica, Moharchhar

It was tough steep climb at Dawar Gurez in Kashmir Mountainscape that I encountered umbellifer with large umbels having pale yellow latex in its hollow stems. Umbellifer later seen at Machhil and Kajinag happened to be Himalyan Archangel related to Choru Angelica glauca and distantly related to asafoetida Ferula kept in kitchen as condiment. Angelica archangelica umbellifer is called as Mohur Charr in Shina language ,it grows 2 to 3 metre tall in riverine mountain slopes during July August . What a tall umbellifer with fluted stems impregnated with yellow latex a gummy exudate!

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High mountain herb *Aconitum heterophyllum, Patees*

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Aconite, Aconitum heterophyllum flowers, Patees

I will admit that I encountered Aconitum heterophyllum and other Aconitum violaceum or Aconitum laeve first time at Machhil then Gurez Tulel in Gurez before I encountered it at Gulmarg or Kajinag in Kashmir. Known by its popular name as Patees or Patrees is called अतिविषा in Sanskrit. What a plant with monk's hood like blooms arranged on a spike! Monsoon rains nurture its beauty and elegance, underground pair of roots traded in market. Perennial plant ruthlessly uprooted by illicit plant collectors and smugglers, due to over exploitation, Aconitum is today threatened taxa in the wild. Endemic Aconitum kashmeiricum plant resembles common Aconitum heterophyllum plant but is much dwarf, leaves are stalked and floral spike dwarfed into a small cluster .I happen to see endemic Aconitum kashmiricum once at Cheema post on Apharwat mountain range above Gulmarg in Kashmir. Kajinag national park known for Markhor population abounds in rich diversity of medicinal plants like Aconitums. Ex-Situ conservation is attempted by many institutes and universities in Kashmir and Chenab valley.

Indian Poke, Ink berry, *Phytolacca acinosa*

Indian Poke, Phytolacca acinosa

On visit to Jai just after marriage in Bhaderwah, I encountered Ink berry plant with maize cob like purplish red fruits locally called saraal .Botanically named as Phytolacca acinosa with tender shoots edible in spring ,its name desribed after lac like red dye in its cob like fruits so fondly eaten by Himalayan Black bears so called Haput makai by Kashmiris ,I was told during my woodland wanderings in Kashmir. I searched google to know its american counterpart is American Poke and indian plant is Indian Poke but both known to have lac like red dye Phytolacca means plant and lac means laksha ???. American constitution drafted with its historic organic ink, soldiers on duty used to write letters to relatives back home by using its ink berries. Root extract is useful against AIDS virus. Latest research has given a lead that red dye obtained from its red berries if coated on solar panels, it enhances solar trapping effeciency manifold.

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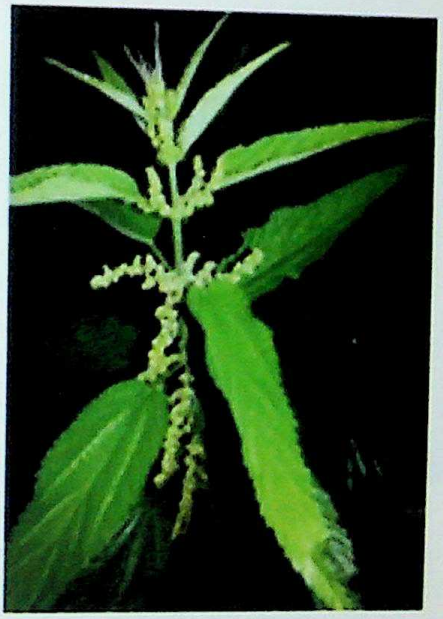
Stinging nettle *Urtica dioica*



Stinging Nettle, Urtica dioica

Stinging nettle stings like a scorpion, I was told by granny during my childhood wanderings beside stinging nettle of two types, one miniature slim trim dark green with unlobed oppositely borne leaved Urtica dioica / parviflora other bigger larger sturdy light green with lobed alternate leaved Girardinia heterophylla. I was stung by both while on visit to Granny's house, Granny served me nettle vegetable so delicious cuisine, I never knew that stinging nettle can be eaten too. During Srinagar stay, I came to know its Kashmiri name as Soi and on visit to Leh, I happened to taste its Zatsat soup, zatsat is Ladakhi name of Urtica hyperborea .On visit to Kishtwar, I encountered its fibre made by locals. Google search illuminated me further, its fibre was known to Germans who innovated nettle fabrics, army was provided nettle uniform during world war 1st .Now again world of nettle fabrics is flourishing. Germany is pioneer in nettle fabrics.At home, Nettle fabrics are being made in Uttrakhand. It was 4th October 2015 when during Forest Food Festival held at Rajbagh Srinagar; Soi soup was served alongwith Wopalhak parantha to visitors. Nettle plant is used as herbal shampoo but it is known farmer's companion plant, it is host plant for many butterflies as well. Nettle plant is the plant having histamine in its foliar and stem trichomes with fragile tips to release histamine injections whenever humans touch it unintentionally .After drying, tender leaves can be made into a herbal tea or soup or vegetable with health benefits.It can be a promising fibre for future ecofriendly fabrics.

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Edible, medicinal pervasive invasive Dandelion *Taraxacum officinale* common in fields, meadows & Golf courses

During childhood days, friends used to join wanderings in wilderness and enjoy puffing off blow balls of Dandelions to get fascinated by its parachute mechanism of seed dispersal. Never knew same Dandelion called Hand in Kashmiri, Handri in Pahari, Haandreyaan in Dogri, in Hindi identified in Botany as Taraxacumofficinale not only attracts bees & butterflies and school going kids, it is miraculous edible and reputed medicinal herb known to Kashmiris and Europeans alike. Laticiferous herb, leaves borne in basal rossette with a single central flower stalk carrying golden flower head called capitulum. All parts of Dandelion can be consumed safely with no side effects, bitterness present calls for herb collection in fall or early spring. It is also named by other names like Lion's tooth,Blow ball, Dandelion. Roots can be brewed into hepatoprotective anti-cancerous antioxidant rich herbal tea, it detoxifies body, helps to balance insulin, bile production, strengthening bones, purifies blood having anti-microbial, anti-fungal properties. Plant is rich in carotenoids, antioxidants, Vit A, VitC, Calcium, magnesium, potassium, Manganese, boron, zinc and recommended to ladies after child delivery in Kashmir. As per latest scientific studies carried out by Siyaram Pandey, it has proven anticancerous action particularly against chemotherapy resistant skin Melanoma with potential to emerge as anti-cancer herb to fight cancer. Dandelion health benefits are immense and innovative recipes made out of its leaves, roots or Flowers, need to be popularised at ecotourism destinations in J&K. On visit to Saruinsar along with Ayurvedic team, I got flowering Dandelions collected to innovate Hand Parantha, Hand chai, Hand pulav, Hand coffee .Cup of Dandelion root tea taken for a month regularly cures diabetes, detoxifies liver of its toxins, enhances appetite, increases hemoglobin and provides relief from constipation.

Dandelion herb, Flowers & Root

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Pohu, Parrotia, False Witch Hazel
Parrotiopsis jacquemontiana

Parrotiopsis jacquemontiana

Dachigam National Park has notable growth of Pohu treelets, clumps of Parrotiopsis jacquemontiana stand leafless but at onset of spring Shrubs & Trees of Pohu get decorated with white floral clusters subtended by white sepals no petals, each flower have many stamens, ovary is hairy. Pohu named differently in different locations is known as Pased in Gojri, Hatab in Kashmiri, Killar in Dogri and familiar to natives as useful in basket, Kangdi making, small timber also used for tool handles as wood is quite strong in strength. Parrotiopsis jacquemontiana is a woody member of family Hamamelidaceae under order Saxifragales ,unranked group of core Dicots & Eudicots. On visit to Chandigam in Lolab valley ,I encountered Pohu Hatab sacred grove as asthan with conserved more than 120 clumps of Parrotiopsis jacquemontiana trees aged more than 100 years as best example of Community conservation efforts under sufi traditions of Kashmir .No dry or green twig or grass or fuelwood is ever collected from the sacred asthan out of sufi faith. Hangul ,critically red deer of Kashmir declared as state animal of J&K with not more than 200 individuals left in Dachigam browses on early spring shoots .Elsewhere Pohu is lopped for fodder ,timber or fuelwood. It is useful nurse crop for deodara seedlings which are shade loving and need shelter to escape direct sunshine . On visit to Botany department ,University of Kashmir to deliver Talk on Folk Plant Taxonomy and Ethnobotany, I encountered blissful flowering on Parrotiopsis jacquemontiana trees in the Botanical garden. Leaves are rounds, toothed with spiral arrangement on twigs, foliage turns golden yellow during autumn Harud and catches attention of casual observers ,mountain trekkers in the mountains of Kashmir.

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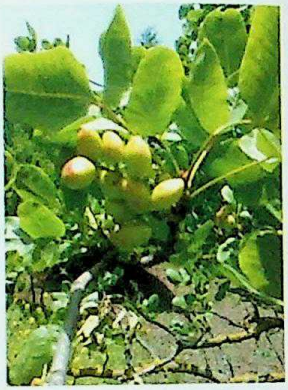
Pista, *Pistacia vera* Anacardiaceae



Pistachio tree

Native to Iran, Syria, cultivated in central Asia, America, Turkey, Pistachio tree Pistacia vera introduced in Srinagar Kashmir by Dogra King, it is a desert deciduous dioecious tree ,leaves pinnately divided into 5-9 broader leaflets ,flowers unisexual borne on separate trees .Fruit shell splits open to expose mauvish green kernels traded in markets as Pistachio nuts. Its wild relative found growing in forests in J&K is Pistacia chinensis called Kakadsingi in Dogri, करकटश in Hindi. I noticed Pistacia vera male female trees growing at Almond villa Srinagar ,orchard of erstwhile ruler Dr Karan Singh during one of Tree Talk session held for nature lovers . Pista can be grafted on wild Kakadsingi and efforts need to be focused on its multiplication in valley of Kashmir .Tree seen growing in Almond villa are now aging, stem colonized by lichens, vigour of old trees is on the decline.

Cabbage butterfly, *Pieris canidia* from Pieridae, family of whites & yellows

Pieris canidia from Pieridae

Evening visit to Botanical Garden in the University of Jammu was rewarded with the sighting of blissful Pieris butterfly enjoying sweet nectar feast on the blue blossoms of lesser known Shivalik bush Eranthemum pulchellum syn Daedlacanthus nervosus ,I used to see common in Nandni wildlife sanctuary in mid eightees.Pieris brassicae ,P canidia,Pieris rapae are butterflies seen commonly in mustard fields ,parks & gardens.Watching Pieris canidia butterflies on blossoms of Eranthemum pulchellum filled me with joy and thrill ,I am sharing blissful moments spent with butterflies on blooms.

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Gland bearing Olive, Olea paniculata syn *Olea glandulifera*

Olea glandulifera in flowering

I knew Kahu tree Olea ferruginea as tree whose strong iron like wood was used as tool handles in my native village Raang Balhand below famed Chauntra devi temple in Ramnagar district.It was here in that village my uncle introduced to me another lesser known Olive which he named as Neelan in Dogri. Neelan tree wood is used for agricultural implements especially paddy raker called Dandi ,my uncle briefed me while roaming in the nearby woods . In the year 1988 while on Probation at IGNFA Dehradun ,I got twin tree saplings one of Olea glandulifera and another of Mahua Madhuca latifolia which I brought to Jammu for raising them inbthis Botanical Garden ,University of Jammu.I handed over two plants to my teacher Prof A K Kaul for introducing both in the garden.Both trees are flourishing presently in the Botanical Garden,University of Jammu. On visit to Botanical Garden today evening,I met Neelan now identified as Olea paniculata syn Olea glandulifera ,oppositely borne leaves with shining bluish green upper surfaces have pin head size depressions in the axil of veins .Flowers are borne in terminal panicles hence species name ia paniculata.It grows along cool ravines along hill watercourses in contrast to Kahu Olea ferruginea which is more hardy andvgrows well in dry rocky hill slopes as seen in Chenab valley.Forestbdepartment need to include this tree in its nurseries for its propagation and plantation in subtropical forest areas .

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Kiss me quick, Yesterday, Today & Tomorrow, *Brunfelsia pauciflora* from Solanaceae

Brunfelsia pauciflora

On visit to the Botanical Garden in University of Jammu after office hours, I encountered dense flowering shrub with deep purple, mauve & white flowers, three coloured beauty belonging to tomato, potato, Nightshade family Solanaceae. Leaves elliptic ovate with acute tips and spiral alternate phyllotaxy, flowers in 3 colours start with purple first day, change to mauve 2nd day and then turn white 3rd day in succession, all three flower colours exhibited simultaneously so bush hasvfascinating common names as Kiss me Quick, Yesterday, Today & Tomorrow, Morning, Noon & Night. Shrub is quite elegant in blooms but all plant parts are toxic. Brunfelsia named after German monk Brunfels is charming addition to any Botanical conservatory or shrubbery but it is exotic to India as it is native to Brazil, South America. Butterflies also get attracted towards its blooms. Previously named Brunfelsia calycina ,now accepted binomial name is Brunfelsia pauciflora var calycina.

Holy Thistle, Marian Thistle *Silybum marianum*, Asteraceae

Silybum marianum

Called variously as Mediterranean thistle ,Lady Thistle,Holy Thistle,Milk thistle,Blessed Mary Thistle,Wild Artichoke ,medicinal thistle with hepatoprotective ,anti-cancer properties ,spiny stemmed plant bears lobed spiny leaves with white milky lines and red purple pseudanthium (Flower head, Capitulum), it grows as weed in areas like Poonch, Udhampur, Jammu, Kathua, Reasi, Katra. In 1986, plant was declared hepatoprotective effective against liver cirrhosis, lowers cholesterol, boosts liver cell growth due to phytochemical Silymarin .Spiny leaves and bracts were eaten in past like Globe Artichoke Cyanara scolymus introduced in Kashmir. It has toxicity to cattle and is not grazed by animals. Research has provided some evidence that Silybum marianum has ability to increase lactation in lactating women as per doctrine of signatures as well as its estrogen like action.

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Edible Van Kanak, Silverberry, *Oleaster Elaeagnus umbellata*

Gandhi Memorial College Of Education, Jammu

Oleaster Elaeagnus umbellata

Elaeagnace is a family of nitrogen fixing shrubs ,trees with antioxidant rich fruits like Seabuckthorn Leh berry Hippophae rhamnoides seen in Ladakh,Gurez & Warwan valley and Russian Silverberry Oleaster seen in Ladakh. Rajouri Poonch,Reasi ,Dudu Ramnagar ,Keran Karnah has wild growth of Umbellate Oleaster Elaeagnus umbellata syn E latifolia ,leaves are alternate ,elliptic oblong with silvery scales underneath ,flowers are without petals,calyx is tubular 4-lobed ,fruits light pink resembling wheat grain so called Ban Kanak or Kankoli in Dogri Pahari .Russian Silverberry seen in Ladakh is called Serching in Ladakhi ,fragrant flowering twigs seen kept in Ladakhi monastries. I was introduced to Van Kanak fruits by my granny at mountain hamlet Ratahaal for the first time.I recall its fruit taste astringent and bit acidic having vit c and minerals .On visit to Keran two years back ,I happen to eat its fruits along LoC beside river Kishanganga which divide India from Pakistan .Once this route was known for flourishing trade in forest resources across river to bothsides ,old bridge made by Forest department bears testimony to past glory of forest department ,many herbs like Kuth fetched sizeable revenue to the state Exchequer . On visit to Botanical garden,University of Jammu ,I came across Oleaster in flowering ,fruits to mature later in monsoon .Indian Institute of Integrative medicine has started a research project on value addition to Wild Oleaster Elaeagnus umbellata to tap its pharmaceutical and neutraceutical benifits.Shrub is known for improving soil fertility due to its nitrogen fixing ability ,enriching soil nitrogen ultimately paving the way for colonization of nitrogen habitats by non- nitrogen fixing species .

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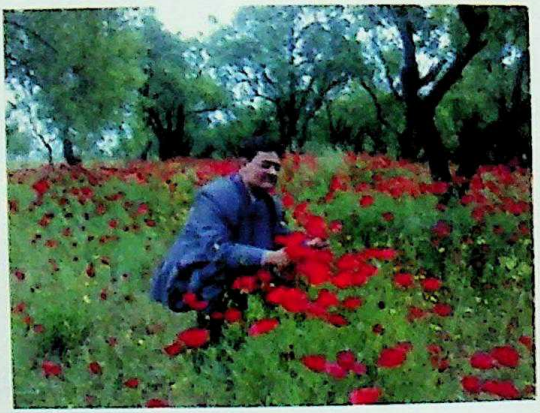
Elegant Large mouthed Red Poppy, *Papaver macrostomum* seen in Kashmir

Gandhi Memorial College Of Education Bantalab Jammu



Papaver macrostomum at Kranchu

I remember my Botany flower practical of class 12th held at Udhampur Higher secondary school when I got Papaver rhoeas to describe for its Taxonomic features ,floral formula ,floral diagram with sections of flower to show that flower is actinomorphic in symmetry ,tetramerous due to 4 petals ,fruit capsule . In villages I used to see White Poppy Papaver somniferum under cultivation .During Doda stay as IFS Probationers undergoing field Range training,I came to know that Poppy cultivation led to place's name as Doda . It was during my visit to Kranchu Pampora in Kashmir that I felt amazed & thrilled to see luxuriant blooming of Red poppy in the Almond orchard ,Large mouth Red Poppy all around presenting elegant display of blooms under almonds.What a breathtaking view,I sat amid sea of Red flowers to get cajoled my springtime emotions .Nadeem Qadri had invited me to Kranchu wetland on International Migration of Birds Day on 10th May . I tried to know distinction between Papaver rhoeas and Papaver macrostomum ,as per renowned Taxonomist Gurcharan Singh ,I got to know that capsule is subglobose in P rhoeas and elongated in P macrostomum ,stigmatic lobes upto 8 ,not extending down in P rhoeas ,8-12 in P macrostomum ,deeply dissected and drooping down stigmatic disc. I feel so nostalgic about Large mouthed Red Poppy flowering in Almond orchard of Kranchu that my emotions get colour and elegance while passing through Pampore on national highway to Srinagar.

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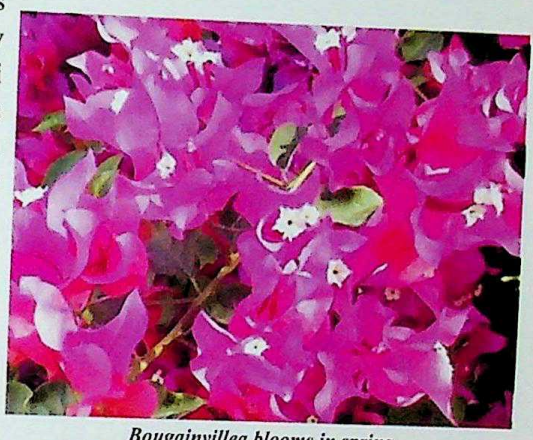
Buganvilla, Bougainvillea named after French Navy admiral Bougainville contemporary of Carl Von Linne Father of Taxonomy



Bougainvillea blooms in spring

Nyctaginaceae family's first plant ,I got familiarity before others was Gulbaasi ,Gulbakshi, Gulebans identified as Mirabilis jalapa in Botany grown fondly in many houses and places of worship at my native home Ramnagar.I used to feel thrilled to see Gulbasi in blooms at 4pm in the evening ,rightly named Four'o clock flower or Marvel of Peru known to Botanists as Mirabilis jalapa.I came to have close aassociation with Red Spiderling called Ittsitt in Dogri ,Punrnava in Sanskrit when I was told that herb has medullary vascular bundles in its stem anatomy during MSC days in 1980's. Most colourful exotic liana of family Nyctaginaceae is Bougainvillea named after French Navy Admiral Bougainville but it was perhaps close associate of Botanist Phillibert Commercon accompanying Bougainvillea on expedition round the globe named Jean Baret who collected for Commerson and Jussieau published acount of Bougainvillea called Buganvilla in Spain in 1789. Jean Baret was infact lover of Botanist Phillibert Commercon who was in ill health and had arranged for close attendant as disguised unknown stranger on expedition round the globe . Colourful bracts add charm and beauty to Bougainvillea otherwise tubular flowers remain inconspicuous to us ,perianth has no distinction of calyx corolla ,stamens have unequal stamens,carpel is single ,ovary unilocular with basal ovule.Fruit is characteristic unique achene surrounded by perianth and named anthocarp as it is developed from fleshy perianth. Famous landscapist of Jammu Piaray Krishen Wattal photographed my romance with its maddening floral elegance, I forgot beauty of Mirabilis jalapa, Boerhaavia diffusa for the moment at DC office complex Samba near Jammu.Many species under cultivation are hybrids with parentage linked to Bougainvillea glabra, B spectabilis, B buttiana etc.

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Elegant golden hybrid *Forsythia intermedia* from Olive family Oleaceae

Golden blooms of Forsythia intermedia

I recently visited Kashmir University campus in connection with National Training Workshop on Plant Taxonomy and encountered mesmerizing beauty of golden yellow blooming graceful exquisite exotic bush planted in Kashmir.No leaf budburst but profusion of 4 petaled flowers on arched branches looked stunningly beautiful.Member of Oleaceae ,leaves appearing after flowering are borne in opposite pairs on slender stemmed twigs ,flowers golden yellow,petals united basally and free upwards. Forsythia intermedia has many garden cultivars ,F intermedia originated by cross between Forsythia viridissima and F suspensa var fortunei. It is the first plant in which dirigen protein was reported followed by another crucifer herb Arabidopsis thaliana well known Molecular tool to unrival DNA sequences and morphogenesis .Dirigin protein found in Forsythia intermedia or Arabidopsis thaliana controls biosynthetic pathway of phytolignan Pinoresinol which is found in foods like Flax,Sesame ,Broccoli and have estrogen like health boosting benefits. Visit to University campus in early spring was a memorable floral treat to eyes ,I felt connected to Forsythia in a different setting and academic ambience with everlasting green impressions of beautiful nature of mother earth.

Elegant floriferous garden cultivar *Clematis jackmani* superba related to wild old man's beard Clematis gouriana

Purple flowers of Clematis jackmani superba

I grew with climbers,creepers,lianas ,bushes,blooms and trees in my native village but fascination of garden flowers blossomed after visit to Mughal gardens of Kashmir when I felt tempted to compile book -Plants of Parks & Gardens in late nineties ,same got published in 2002 during my posting in State Vigilance Organization. On frequent wanderings to Srinagar parks & gardens,I felt mesmerized to encounter purple flowering Clematis jackmani var superba .Felt nostalgic to recall childhood familiarity with spring blooming Mountain clematis locally called Chiwda in Dogri which grows wild in Kishtwar ,Dachigam as well.Clematis gouriana comparitvely less beautiful grows commonly in Shivaliks.Clematis barbellata ,C connata, C grata ,C buchananiana are other climbers seen around in Jammu hills.Clematis climbers have oppositely borne pair of compound leaves at each node,flower beauty is due to petaloid sepals,petals absent ,stamens free ,carpels free.Clematis jackmanii superba is hybrid cultivar so it does not produce seeds,propagation is done through stem cuttings. Elegant flowering of Clematis jackmanii is however more stunning and adds charm & glory to our parks and gardens in Kashmir. Alas ,devastating Srinagar floods of 2014 however dealt a severe blow to exquisite beauty of flowers like Clematis jackmanii superba.

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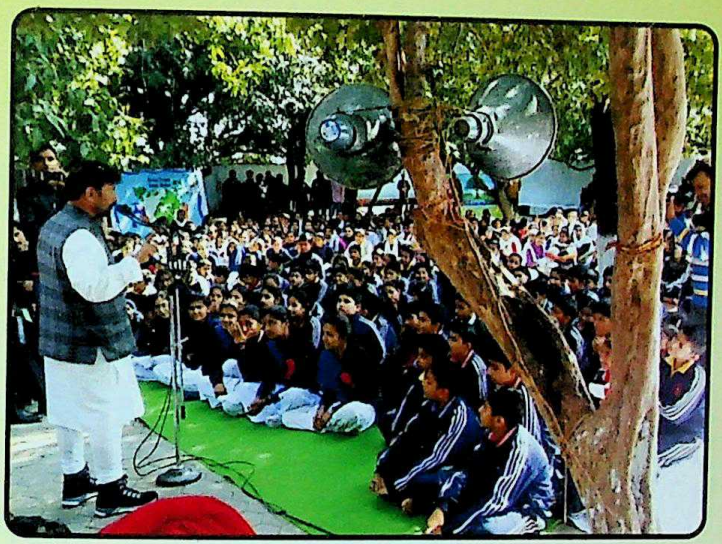

Ch. Lal Singh Hon'ble Minister for Forest, Ecology & Environment, J&K addressing the gathering on occasion of Paryavaran Excursion at Jasrota Wildlife Sanctuary

Ch. Lal Singh Hon'ble Minister for Forest, Ecology & Environment, J&K addressing the gathering on occasion of Paryavaran Excursion at Environment Park Raika.

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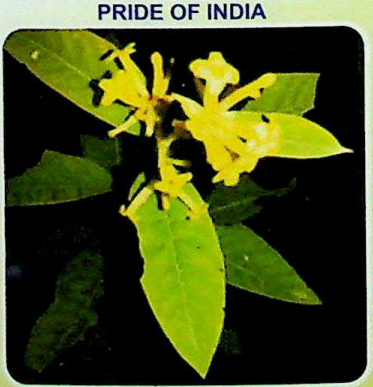
BLISTER BEETLE

KRISHAN NEET

VAN - WANGUN

PRIDE OF INDIA

COMMON TIGER BUTTERFLY



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